

SERVICE MANUAL

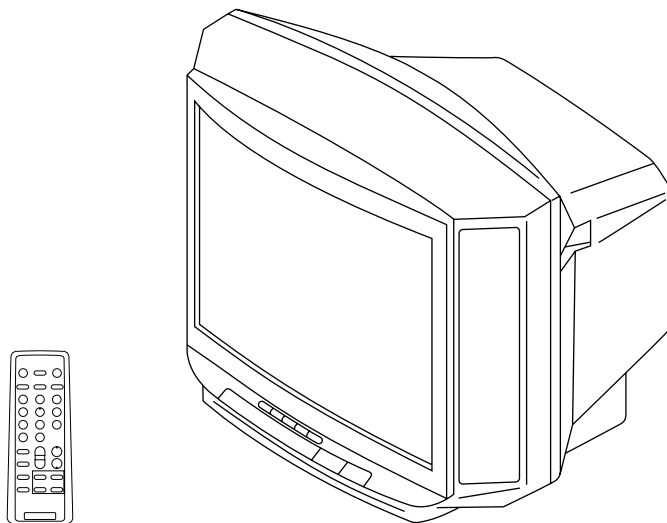
BG-2S CHASSIS

<u>MODEL</u>	<u>COMMANDER</u>	<u>DEST.</u>	<u>CHASSIS NO.</u>
--------------	------------------	--------------	--------------------

<i>KV-2199M5J</i>	<i>RM-869</i>	<i>ME</i>	<i>SCC-U07K-A</i>
-------------------	---------------	-----------	-------------------

<i>KV-J21MF2J</i>	<i>RM-869</i>	<i>ME</i>	<i>SCC-U07L-A</i>
-------------------	---------------	-----------	-------------------

<u>MODEL</u>	<u>COMMANDER</u>	<u>DEST.</u>	<u>CHASSIS NO.</u>
--------------	------------------	--------------	--------------------



TRINITRON® COLOR TV
SONY®

SPECIFICATIONS

	KV-2119M5J	KV-J21MF2J	Note
Power requirements	110-240 V AC, 50/60 Hz		
Power consumption (W)	Indicated on the rear of the TV		
Television system	B/G	B/G, I, D/K, M	
Color system	PAL, PAL 60, SECAM, NTSC4.43, NTSC3.58 (AV IN)	PAL, PAL 60, SECAM, NTSC4.43, NTSC3.58	
Channel coverage			
B/G	VHF: E2 to E12 / UHF: E21 to E69 / CATV: S01 to S03, S1 to S41		
I	–	UHF: B21 to B68 / CATV: S01 to S03, S1 to S41	
D/K	–	VHF: C1 to C12, R1 to R12/ UHF: C13 to C57, R21 to R60/ CATV: Z1 to Z39, S01 to S03, S1 to S41	
M	–	VHF: A2 to A13 / UHF: A14 to A79 / CATV: A-8 to A-2, A to W+ 4, W+ 6 to W+ 84	
Audio output (speaker)	3W + 3W		
Inputs	ㄗ (antenna): 75 ohms external terminal		
	⏮ (video input) jacks: phono jacks		
	⦿ (video): 1 Vp-p, 75 ohms		
	♪ (audio): 500 mVrms, high impedance		
Outputs	🎧 (earphone) jack: mini jack	🎧 (headphones) jack	
	⏭ (monitor output) jacks: phono jacks		
	⦿ (video): 1 Vp-p, 75 ohms		
	♪ (audio): 500 mVrms		
Picture tube	21in.		
Tube size (cm)	54		Measured diagonally
Screen size (cm)	51		Measured diagonally
Dimensions (w/h/d, mm)	610 × 470 × 474		
Mass (kg)	22		

Design and specifications are subject to change without notice.

CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>	<u>Section</u>	<u>Title</u>	<u>Page</u>
1. GENERAL		4	6. DIAGRAMS		
2. DISASSEMBLY			6-1.	Block Diagrams	21
2-1.	Rear Cover Removal	8	6-2.	Circuit Boards Location	23
2-2.	A Board Removal	8	6-3.	Schematic Diagrams and Printed Wiring Boards...	23
2-3.	Service Position	8	(1)	Schematic Diagram of A Board	29
2-4.	Replacement of Parts	8	(2)	Schematic Diagrams of C and VM Boards	33
2-5.	Demagnetization Coil and Picture Tube Removal	9	6-4.	Semiconductors	37
3. SET-UP ADJUSTMENTS			7. EXPLODED VIEWS		
3-1.	Beam Landing	10	7-1.	Chassis	39
3-2.	Convergence	11	8. ELECTRICAL PARTS LIST		40
3-3.	Focus Adjustment	13			
3-4.	G2 (Screen) and White Balance Adjustments	13			
4. SELF DIAGNOSIS FUNCTION		14			
5. CIRCUIT ADJUSTMENTS					
5-1.	Adjustments with Commander	15			
5-2.	Adjustment Method	16			
5-3.	A Board Adjustment after IC003 (Memory)				
	Replacement	20			
5-4.	Picture Distortion Adjustment	20			

SECTION 1 GENERAL

The operating instructions mentioned here are partial abstracts from the Operating Instructions Manual. The page numbers of the Operating Instruction Manual remain as in this manual.

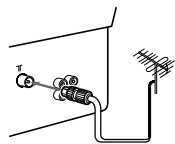
Getting Started

Connections

Connecting a VHF antenna or a combination VHF/UHF antenna — 75-ohm coaxial cable (round)

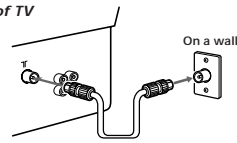
Attach an optional IEC antenna connector to the 75-ohm coaxial cable. Plug the connector into the  (antenna) socket at the rear of the TV.

Rear of TV

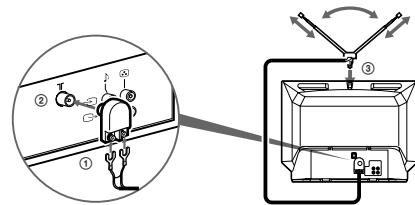


or

Rear of TV



Connecting an indoor antenna



Notes

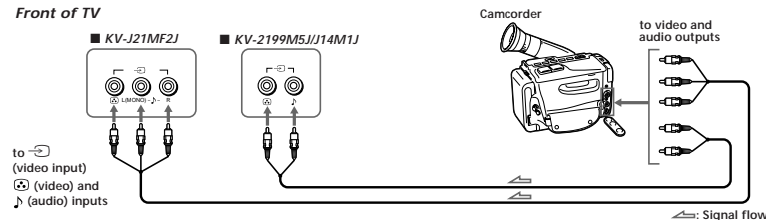
- You are advised to use an outdoor antenna for better reception.
- Model KV-J14M1J is used for illustration purposes, however, the connection procedure is the same for KV-2199M5J and KV-J21MF2J.

Connecting optional equipment



You can connect optional audio/video equipment to your TV such as a VCR, multi disc player, camcorder, video game or stereo system.

Connecting video equipment using the (video input) jacks

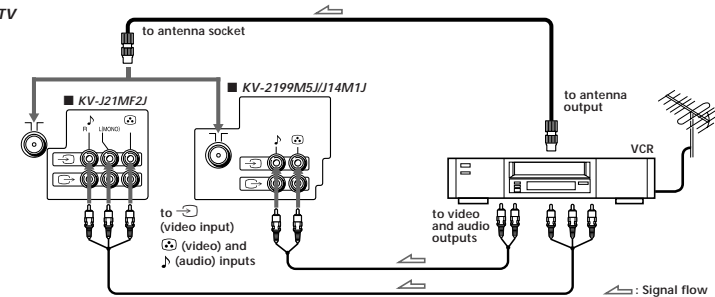
Front of TV




When connecting monaural audio/video equipment to model KV-J21MF2J

Connect the yellow plug to  and the black plug to  (MONO).

Rear of TV

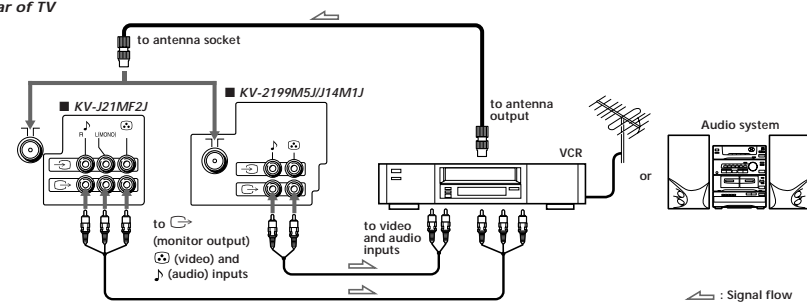


When connecting video equipment to the (video input) jack

Do not connect video equipment to the  (video input) jacks at the front and the rear of your TV simultaneously; otherwise the picture will not be displayed properly on the screen.

Connecting audio/video equipment using the (monitor output) jack

Rear of TV



When recording through the (monitor output) jack

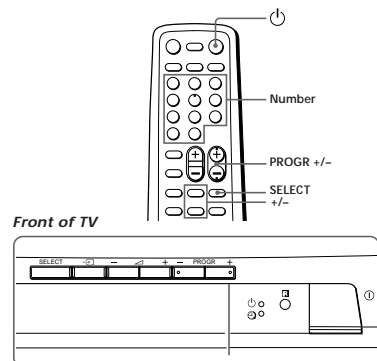
Do not change the channel or video input while recording with a VCR; otherwise the channel or video input you are recording also will be changed.

Presetting channels

You can preset up to 100 TV channels in numerical sequence from program position 1 using the buttons on the remote commander or the TV.

You can preset TV channels quickly, automatically or manually.

Remote commander



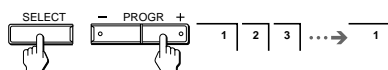
Quick channel presetting

- 1 Press ① to turn on the TV.



When the TV is turned on in standby mode, press ① on the remote commander.

- 2 Press SELECT and PROGR + on the TV simultaneously for one to two seconds.



If the picture color is poor and/or the sound is noisy (for KV-J21MF2J/J14M1J)

Select the appropriate TV system as follows:

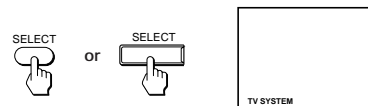
- 1 Press SELECT on the remote commander or the TV until "TV SYSTEM" appears.
- 2 Press +/- on the remote commander or ① +/- on the TV until the picture and sound become normal.

Notes

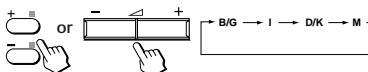
- If you do not know your local TV system, consult your nearest authorized service center or dealer.
- The setting of the "TV SYSTEM" is memorized for each program position.

Presetting channels automatically

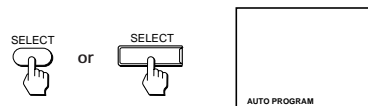
- 1 Press SELECT on the remote commander or the TV until "TV SYSTEM" appears on the screen (for KV-J21MF2J/J14M1J).



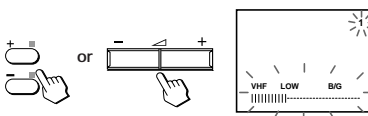
- 2 Press +/- on the remote commander or ① +/- on the TV to select the TV system (for KV-J21MF2J/J14M1J).



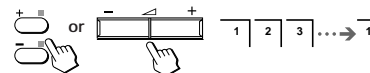
- 3 Press SELECT on the remote commander or the TV until "AUTO PROGRAM" appears on the screen.



- 4 Press +/- on the remote commander or ① +/- on the TV.

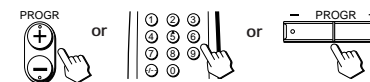


- 5 Press +/- on the remote commander or ① +/- on the TV again.



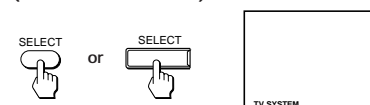
To start presetting channels automatically from the specified program position

Press PROGR +/- or number buttons on the remote commander or PROGR +/- on the TV until the required program position appears on the screen after step 4 of "Presetting channels automatically".

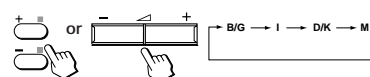


Presetting channels manually

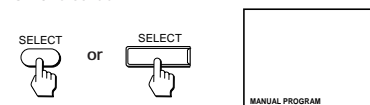
- 1 Press SELECT on the remote commander or the TV until "TV SYSTEM" appears on the screen (for KV-J21MF2J/J14M1J).



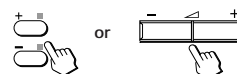
- 2 Press +/- on the remote commander or ① +/- on the TV to select the TV system (for KV-J21MF2J/J14M1J).



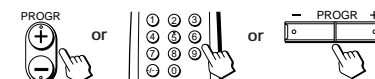
- 3 Press SELECT on the remote commander or the TV until "MANUAL PROGRAM" appears on the screen.



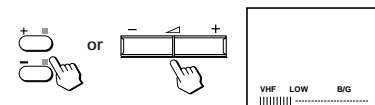
- 4 Press +/- on the remote commander or ① +/- on the TV.



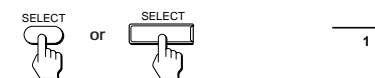
- 5 Press PROGR +/- or number buttons on the remote commander or PROGR +/- on the TV until the required program position appears on the screen.



- 6 Press +/- on the remote commander or ① +/- on the TV until the required channel picture appears on the screen.



- 7 Press SELECT on the remote commander or the TV.



Disabling program positions

- 1 Press PROGR +/- or number buttons on the remote commander or PROGR +/- on the TV until the unused or unwanted program position appears on the screen.

- 2 Press SELECT on the remote commander or the TV until "MANUAL PROGRAM" appears on the screen.

- 3 Press +/- on the remote commander or ① +/- on the TV.

- 4 Press PIC MODE on the remote commander.


- 5 Press SELECT on the remote commander or the TV.

To preset the disabled program position again
Preset the channel quickly, automatically or manually.

Watching the TV

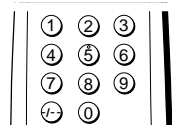
- 1 Press  to turn on the TV.



When the TV is turned on in standby mode, press  on the remote commander.

- 2 Select the TV program you want to watch.

To select a program position directly
Press the number button.



To select a two-digit program position, press “-/-” before the number buttons.
For example: to select program position 25, press “-/-,” and then “2” and “5.”



To scan through program positions

Press PROG +/- until the program position you want appears.




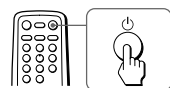
- 3 Press  to adjust the volume.




Turning off the TV


To turn off the TV temporarily

Press  on the remote commander. The  indicator on the TV lights up.



To turn off the TV completely

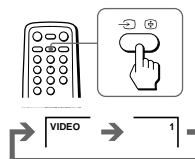
Press  on the TV.

If the power on the TV is turned off in standby mode, the  indicator on the TV may remain alight for a while.



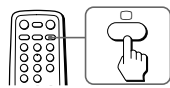
Watching the video input

Press  .



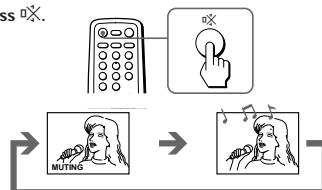
To watch TV

Press .





Muting the sound

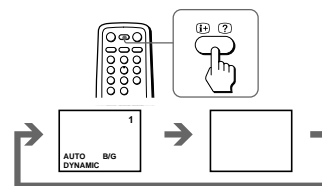
Press .



Displaying on-screen information

Press  .


The program position, local system, and TV settings are displayed on the screen.

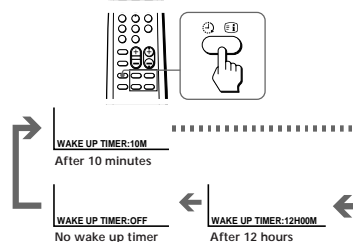


Setting the Wake Up Timer


You can set the TV automatically turned on as you program.



- 1 Press   repeatedly to set the timer.

The on-screen display appears and the  indicator on the TV lights up.



- 2 If you want a particular TV program or video input to be displayed using the Wake Up Timer, select the TV program or video input.

- 3 Press  on the remote commander or set the Sleep Timer to turn off the TV in standby mode.

To cancel the Wake Up Timer, press   repeatedly until “WAKE UP TIMER: OFF” appears, or turn off the main power of the TV.

Notes

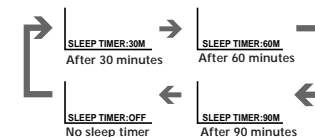
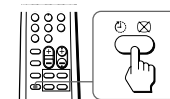
- The Wake Up Timer starts immediately after the on-screen display disappears.
- The last TV program position or video input just before the TV turns into standby mode will appear when the TV is turned on using the Wake Up Timer.



- If no buttons or controls are pressed for more than two hours after the TV is turned on using the Wake Up Timer, the TV automatically turns into standby mode. If you want to continue watching the TV, press any button or control on the TV or remote commander.

Setting the Sleep Timer

You can set the TV automatically turned off as you program.

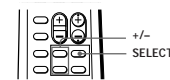
Press  .



To cancel the Sleep Timer, press   repeatedly until “SLEEP TIMER: OFF” appears, or turn off the TV.

Changing the on-screen display language

You can use buttons on the remote commander or the TV to change the on-screen display language.



- 1 Press SELECT until the screen appears as follows:



- 2 Press +/- to select “عربي”.



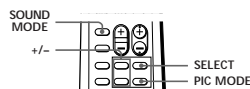
Note

- You can also use SELECT and +/- on the TV to select the on-screen display language.

Adjusting the picture

Note on the SOUND MODE button

- The sound mode feature is unavailable for your TV. Thus, the SOUND MODE button on the remote commander is not used for your TV.

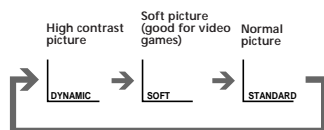


Selecting the picture mode

Press PIC MODE until the mode you want appears.



Each time you press PIC MODE, the screen changes as follows:



Note

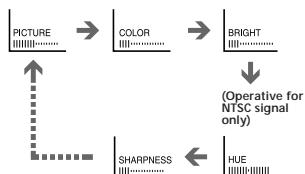
- If you change the picture mode after the following adjustments, the adjustment changes in accordance with the picture mode.

Adjusting the picture setting

- Press SELECT until the item you want to adjust appears.



Each time you press SELECT, the screen changes as follows:



- Press +/- to adjust the item.



- To adjust other items, repeat steps 1 and 2.

Note

- You can also use SELECT and +/- on the TV to adjust the picture setting.

Front of TV



If the picture color is abnormal when receiving programs through the ㄗ (antenna) terminal
Change the "TV SYSTEM" (for KV-J21MF2J/J14M1J) or "COLOR SYSTEM" setting or adjust the "COLOR" level in the on-screen display until the color becomes normal.

If the picture is abnormal when receiving programs through the ㄚ (video input) jack
Change the "COLOR SYSTEM" setting or adjust the "COLOR" level in the on-screen display until the color becomes normal.

Note

- Normally set "COLOR SYSTEM" to "AUTO".

If the sound is distorted or noisy when receiving programs through the ㄗ (antenna) terminal

Change the "TV SYSTEM" setting (for KV-J21MF2J/J14M1J) in the on-screen display until the sound becomes clear.

Additional Information

Troubleshooting

If you have any problems, read this manual again and check the countermeasure for each of the symptoms listed below.

If the problem persists after trying the methods below, contact your nearest authorized service center or dealer.

Snowy picture Noisy sound



- Check the antenna.
- Check the antenna connection on the TV and on the wall.
- Check the TV SYSTEM setting (for KV-J21MF2J/J14M1J).

Dotted lines or stripes



- This may be caused by local interference (e.g. cars, neon signs and hair dryers). Adjust the antenna for minimum interference.

Double images or "ghosts"



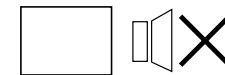
- This may be caused by reflections from nearby mountains or buildings. A highly directional antenna may improve the picture.

Good picture Noisy sound



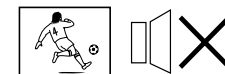
- Check the TV SYSTEM setting (for KV-J21MF2J/J14M1J).

No picture No sound



- Press ① or ②.
- Check the antenna connection.
- Check the VCR connections.
- Check the power cord connection.
- Check the standby mode.

Good picture No sound



- Press ④ +.
- Press ⑤.

No color



- Adjust the COLOR level in the on-screen display.
- Check the COLOR SYSTEM setting.

TV cabinet creaks

- Even if the picture or the sound is normal, changes in the room temperature sometimes make the TV cabinet expand or contract, making a noise. This does not indicate a malfunction.

Note on the remote commander

- The supplied remote commander is used on several models of the TV. If you do not find instructions for some controls that are on the remote commander, that means your TV does not employ the features of those controls, e.g. ⑥ and SOUND MODE.

Notes

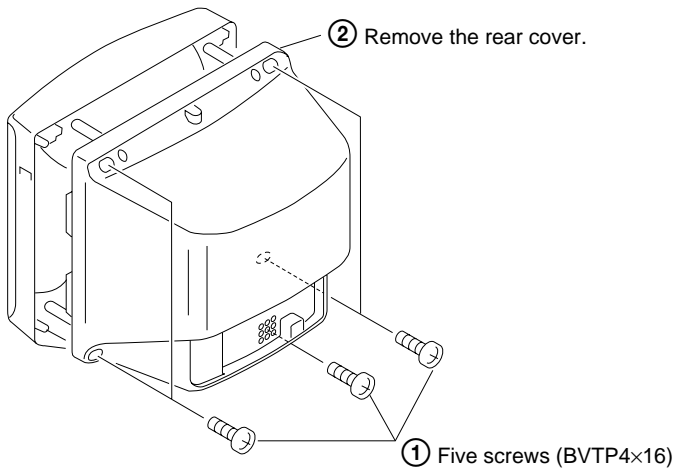
- When you turn on the TV, you may hear the "boon" sound that is caused by the demagnetization of the TV. This does not indicate a malfunction.
- The picture color may become abnormal if you change the direction of your TV. To obtain the normal picture color, press ① on the TV to turn off the TV for five minutes and then turn it on again.
- Design and specifications are subject to change without notice.
- All contents in the instruction manual are subject to change without notice.

WARNING

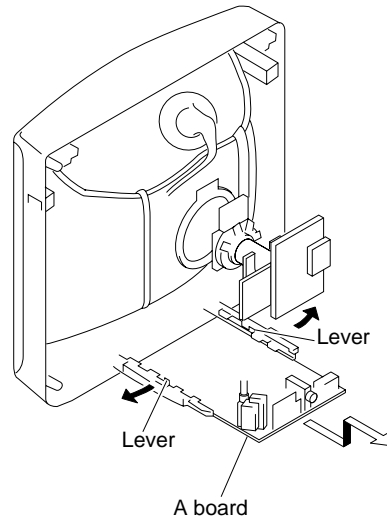
Do not install the appliance in a confined space, such as a bookcase or built-in cabinet.

SECTION 2 DISASSEMBLY

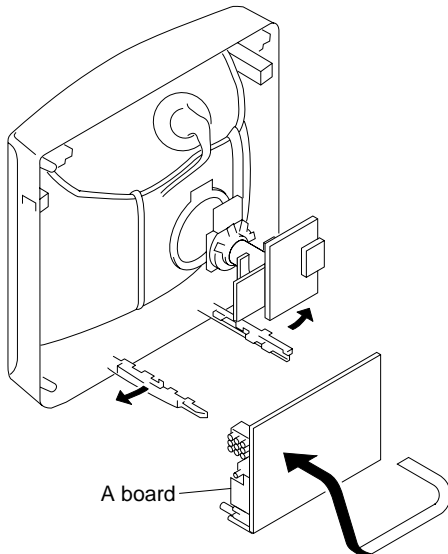
2-1. REAR COVER REMOVAL



2-2. A BOARD REMOVAL



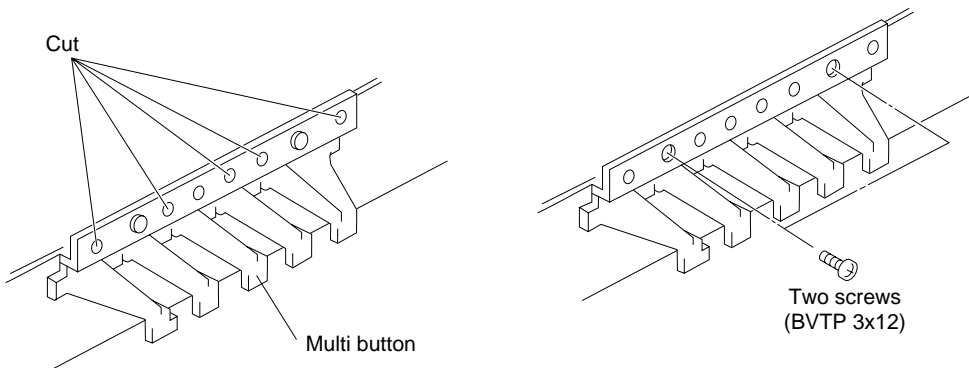
2-3. SERVICE POSITION



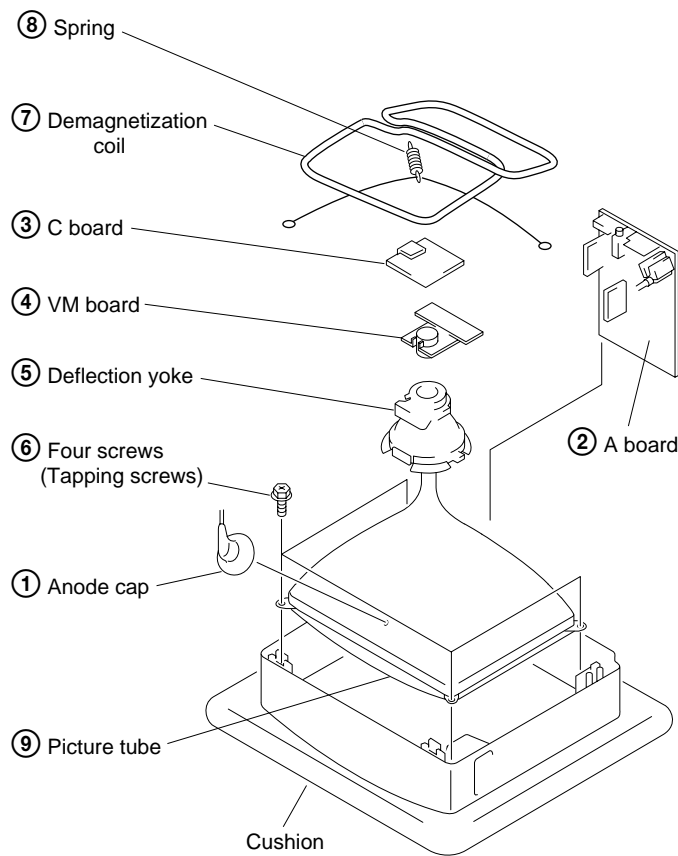
2-4. REPLACEMENT OF PARTS

For replacement of the Multi Button and Light Guide, cut the welded portions from them, exchange with the new parts, and fix them with screws (+BVTP) respectively.

2-4-1. REPLACEMENT OF MULTI BUTTON



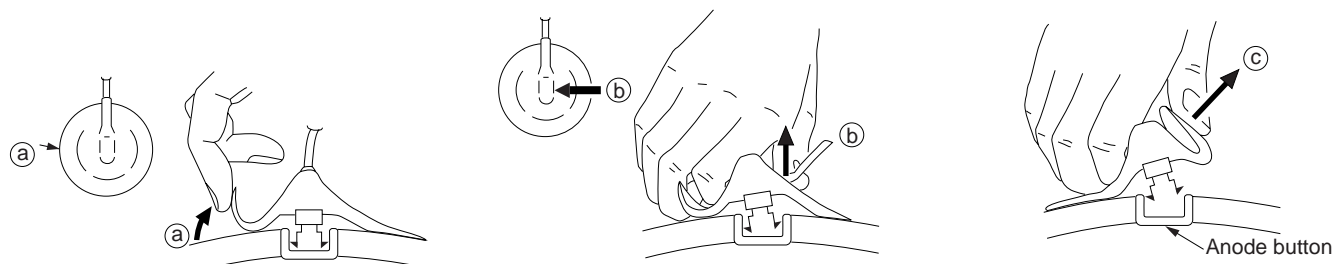
2-5. DEMAGNETIZATION COIL AND PICTURE TUBE REMOVAL



• REMOVAL OF ANODE-CAP

NOTE : Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon paint on the CRT, after removing the anode.

• REMOVING PROCEDURES



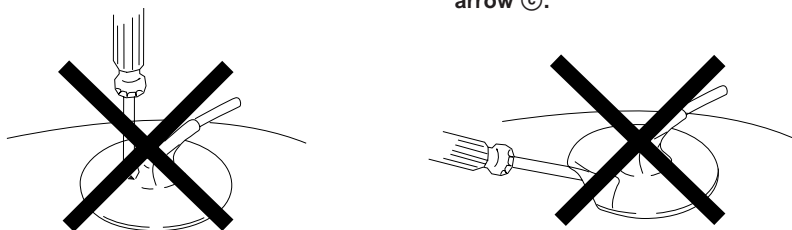
① Turn up one side of the rubber cap in the direction indicated by the arrow ①.

② Using a thumb, pull up the rubber cap firmly in the direction indicated by the arrow ②.

③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling it up in the direction of the arrow ③.

• HOW TO HANDLE AN ANODE-CAP

- ① Don't hurt the surface of anode-caps with sharp shaped objects!
- ② Don't press the rubber too hard so as not to damage the inside of anode-caps!
A material fitting called the shatter-hook terminal is built into the rubber.
- ③ Don't turn the foot of rubber over too hard!
The shatter-hook terminal will stick out or damage the rubber.



SECTION 3

SET-UP ADJUSTMENTS

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
- These adjustments should be performed with rated power supply voltage unless otherwise noted.

Controls and switch should be set as follows unless otherwise noted:

PICTURE control normal
BRIGHTNESS control normal

Perform the adjustments in order as follows :

1. Beam Landing
2. Convergence
3. Focus
4. White Balance

Note : Test Equipment Required.

1. Color-bar/Pattern Generator
2. Degausser
3. Oscilloscope

Preparations :

- In order to reduce the influence of geomagnetism on the set's picture tube, face it east or west.
- Switch on the set's power and degauss with the degausser.

3-1. BEAM LANDING

1. Input the white raster signal with the pattern generator.

Contrast
Brightness

}

normal
2. Set the pattern generator raster signal to green.
3. Move the deflection yoke to the rear and adjust with the purity control so that the green is at the center and the blue and the red take up equally sized areas on each side.
(See Figures 3-1 through 3-3.)
4. Move the deflection yoke forward and adjust so that the entire screen is green. (See Figure 3-1.)
5. Switch the raster signal to blue, then to red and verify the condition.
6. When the position of the deflection yoke has been decided, fasten the deflection yoke with the screws.
7. If the beam does not land correctly in all the corners, use a magnet to adjust it.
(See Figure 3-4.)

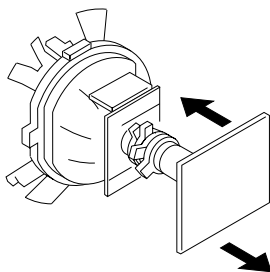


Fig. 3-1

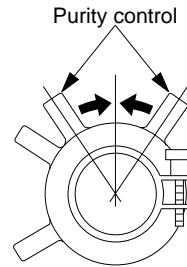


Fig. 3-2

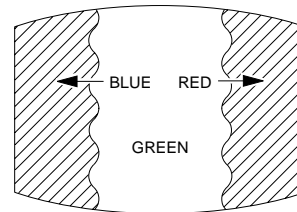


Fig. 3-3

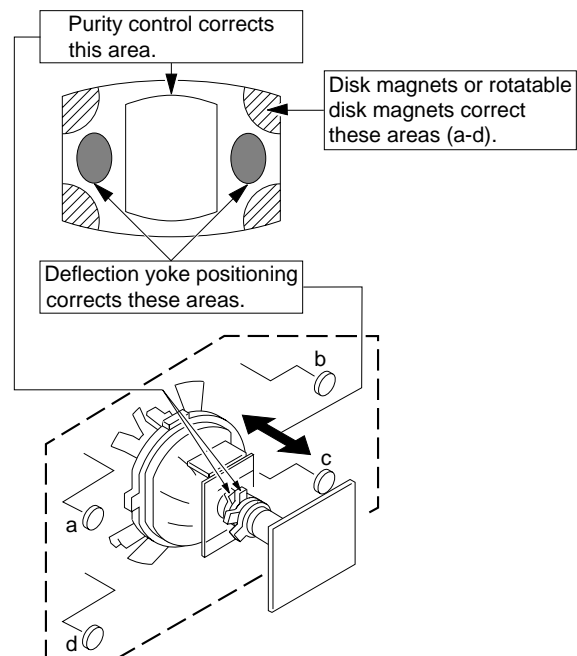


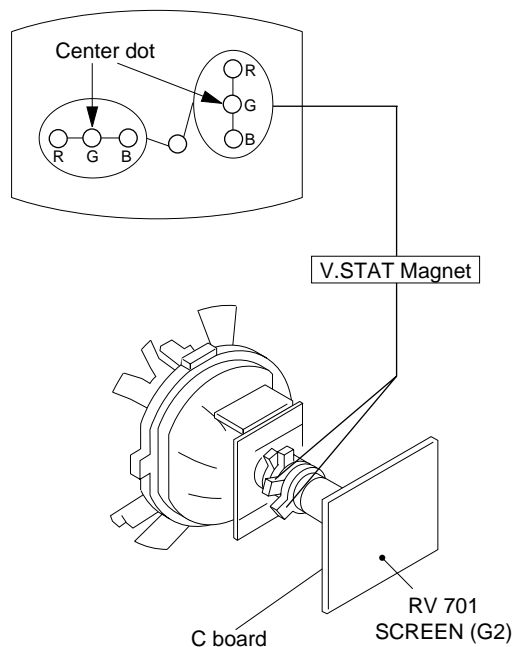
Fig. 3-4

3-2. CONVERGENCE

Preparation :

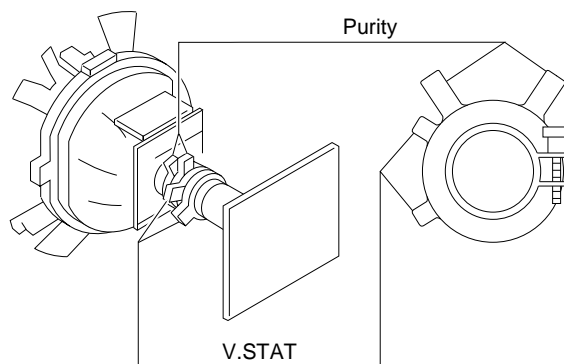
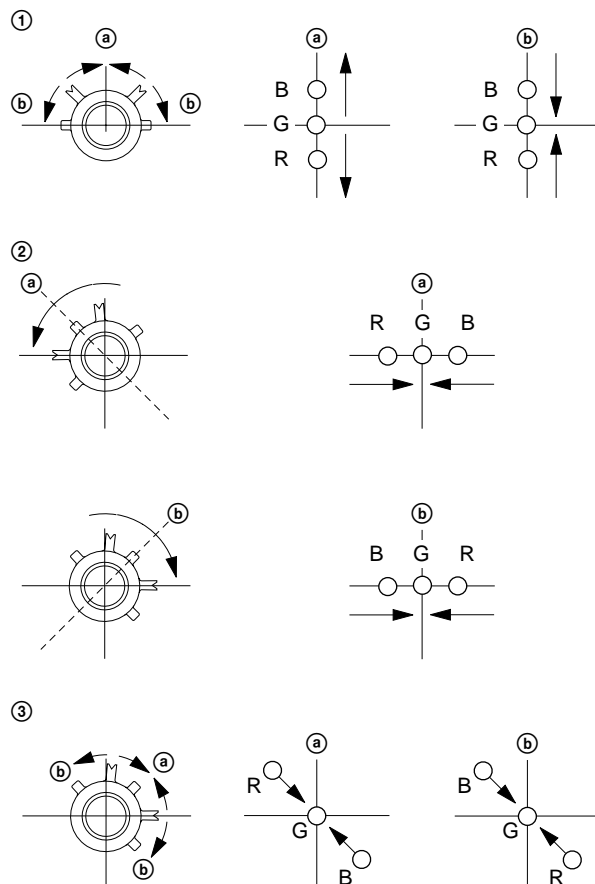
- Before starting this adjustment, adjust the focus, horizontal size, and vertical size.
- Minimize the brightness setting.
- Provide dot pattern.

(1) Horizontal and Vertical Static Convergence



1. (Moving vertically), adjust the V.STAT magnet so that the red, green, and blue points are on top of each other at the center of the screen.
2. (Moving horizontally), adjust the V.STAT magnet so that the red, green, and blue points are on top of each other at the center of the screen.
3. Tilt the V.STAT magnet and adjust the static convergence by opening or closing the V.STAT magnet.

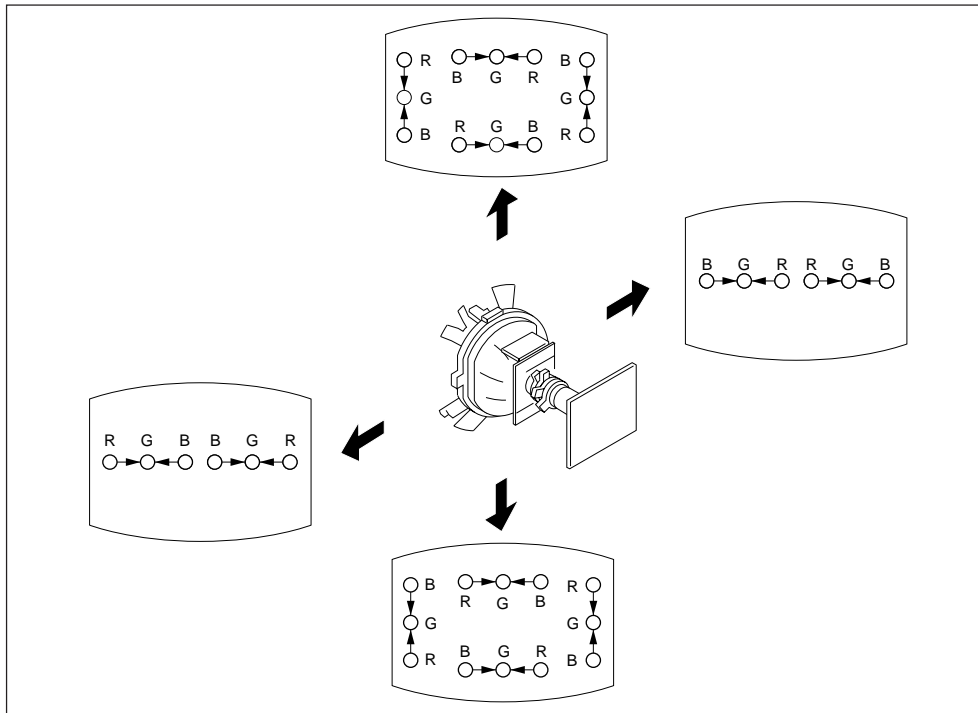
If the V.STAT magnet is moved in the direction of the (a) and (b) arrows, the red, green, and blue points move as shown below.



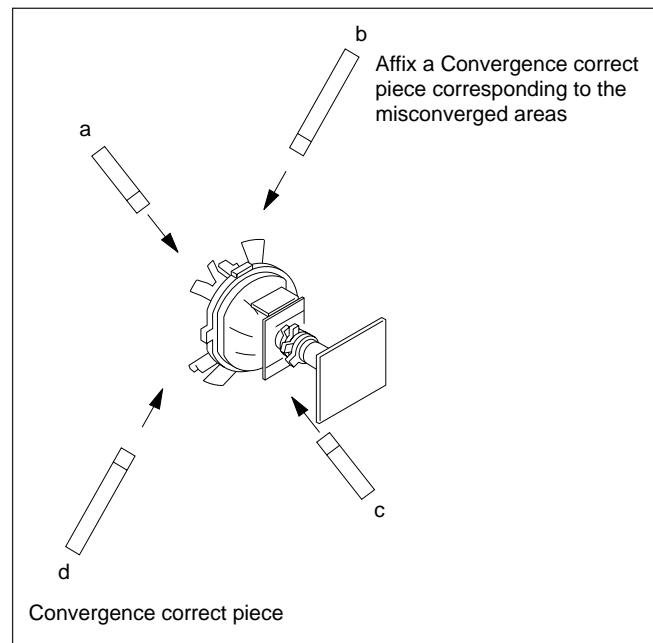
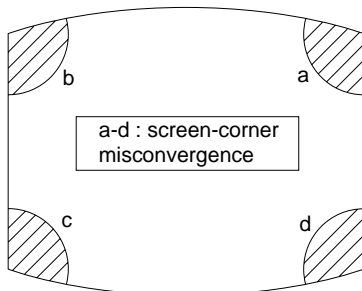
(2) Dynamic Convergence Adjustment

Preparation :

- Before starting this adjustment, adjust the horizontal static convergence and the vertical static convergence.
1. Slightly loosen the deflection yoke screws.
 2. Remove the deflection yoke spacer.
 3. Move the deflection yoke as shown in the figure below and optimize the convergence.
 4. Tighten the deflection yoke screws.
 5. Install the deflection yoke spacer.

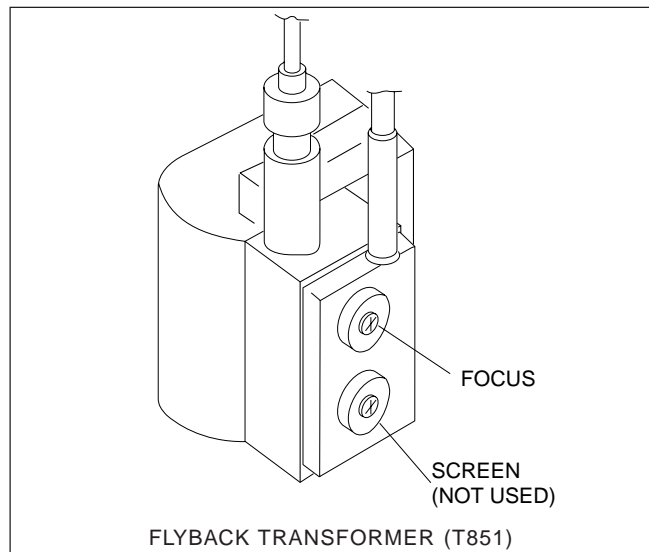


(3) Screen-corner Convergence



3-3. FOCUS ADJUSTMENT

Adjust FOCUS control on the flyback transformer for the best focus.



Note: Screen VR is not used.

a. AN ITEM OF ADJUSTMENT

Item number	Adjustment item	Initial DATA	Note
09	RDR	25	WHITE POINT R
0A	GDR	20	WHITE POINT G
0B	BDR	20	WHITE POINT B

b. METHOD OF CANCELLATION FROM SERVICE MODE

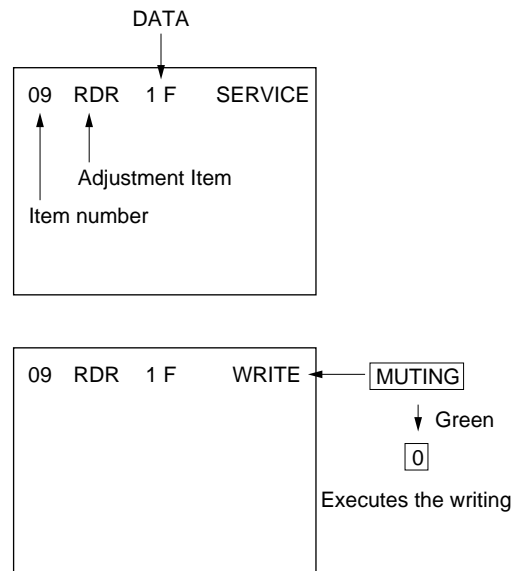
Set the standby condition (Press **POWER** button on the commander) and then press **POWER** button again, hereupon it becomes TV mode.

c. METHOD OF WRITE FOR MEMORY

- 1) Set to Service Mode.
- 2) Press **[1]** (UP) and **[4]** (DOWN), select the item for adjustment.
- 3) Press **MUTING** button indicate WRITE (Green) on screen.
- 4) Press **[0]** button to write into memory.

d. MEMORY WRITE CONFIRMATION METHOD

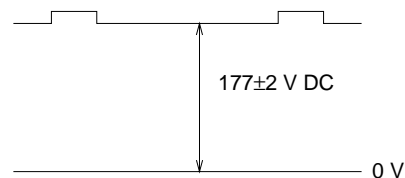
- 1) After adjustment, pull out the plug from the AC outlet, and then plug into the AC outlet again.
- 2) Turn the power switch ON and set to Service Mode.
- 3) Call the adjusted items again to confirm adjustments were made.



3-4. G2 (SCREEN) AND WHITE BALANCE ADJUSTMENTS

1. G2 (SCREEN) ADJUSTMENT (RV701)

- 1) Set the PICTURE and BRIGHTNESS to normal.
- 2) Put to VIDEO input mode without signals.
- 3) Connect R, G, and B of the C board cathode to the oscilloscope.
- 4) Adjust G2 (RV701) volume to the value below.



2. WHITE BALANCE ADJUSTMENTS

- 1) Set to Service Mode.
- 2) Input an entire white signal.
- 3) Set the PICTURE to maximum.
- 4) Select RDR(09) with **[1]** and **[4]**, and then set the level to 25 with **[3]** and **[6]**.
- 5) Select GDR(0A) and BDR(0B) with **[1]** and **[4]** and adjust the level with **[3]** and **[6]** for the best white balance.
- 6) Write into the memory by pressing **MUTING** then **[0]**.

SECTION 4

SELF DIAGNOSIS FUNCTION

If no acknowledgement is returned from a device which is turned "ON", the device has a problem.

In this case, one of the LED's responding to the problem device will flicker a defined number of times.

Flickering is operated by lighting the LED's for 60ms each time.

The flickering frequency responding to each failed device is shown below.

Board name	A Board	A Board
Ref. No.	IC003	IC300
Device	NONVOLATILE MEMORY (ST24C04FB6)	Y/C JUNGLE (TDA8375A)
Flickering Frequency	1	3

All the devices are checked one after another from the left of the table.

If an error is found, the responding LED will start flickering.

So, if more than 1 device have failed, only the one on the left side will flicker.

SECTION 5

CIRCUIT ADJUSTMENTS

5-1. ADJUSTMENTS WITH COMMANDER

Service adjustments are made with the RM-869 that comes with this unit.

Entering service mode

With the unit on standby

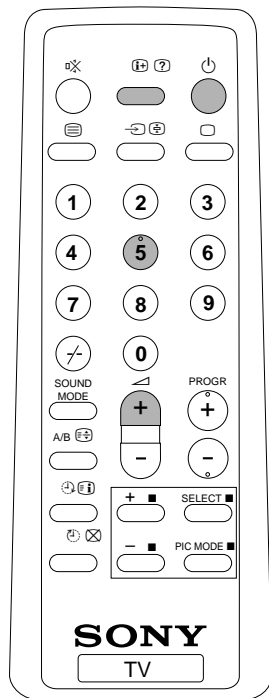
↓
DISPLAY

↓
5

↓
VOL (+)

↓
POWER

The operation sequence puts the unit into service mode.

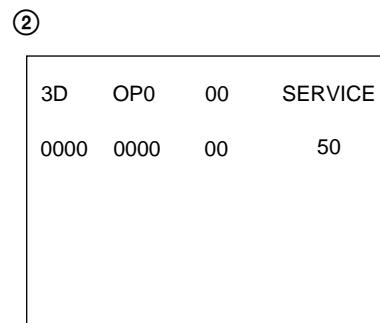
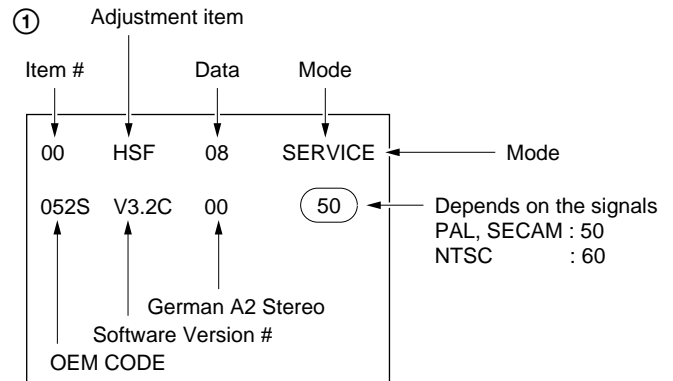


RM-869

- 1, 4** Raise/lower the service item number
- 3, 6** Raise/lower the data
- MUTING** Writes
- 0** Executes the writing

- 7, 0** All data becomes the values in memory
- 8, 0** All user control goes to the standard state
- 5, 0** Service data initialization (Be sure not to use usually.)
- 2, 0** Write 50Hz adjustment data to 60Hz, or viceversa.

The screen display is :



(Bit options adjustable)

- 1, 4** Select the adjustment item.
- ↓
- 3, 6** Raise/lower the data.
- ↓
- MUTING** Writes
- ↓
- 0** Executes the writing.

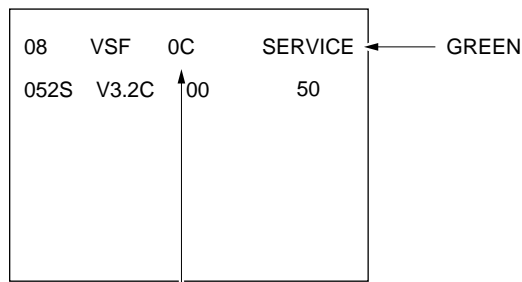
5-2. ADJUSTMENT METHOD

Item Number 08

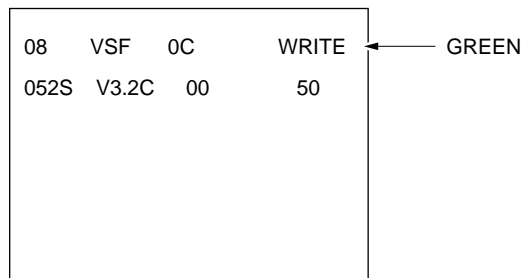
This explanation uses V-SHIFT as an example.

1. Select 08 V-SHIFT with the **[1]** and **[4]** buttons.
2. Raise/lower the data with the **[3]** and **[6]** buttons.
3. Select the optimum state. (The standard is 0F for PAL reception.)
4. Write with the **MUTING** button.
5. Execute the writing with the **[0]** button. (The WRITE display returns to green SERVICE.)

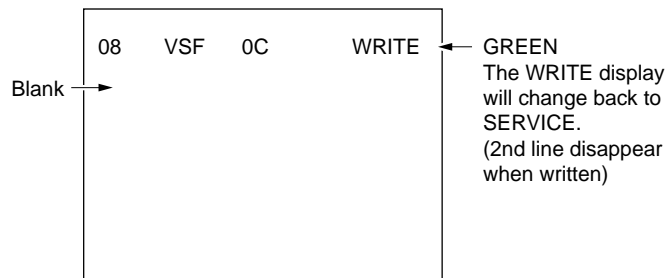
Use the same method for Items Number 00-40. Use **[1]** and **[4]** to select the adjustment item, use **[3]** and **[6]** to adjust, write with **MUTING**, then execute the write with **[0]**.



Adjusted with 3 and 6 buttons



Written with **MUTING**



Write executed with **[0]**

Adjustment Item Table

Item No.	Adj Item	Initial Data	Note for Different Data	Standard Data	Function	Device
00	HSF	24	50/60Hz/RGB 50/RGB 60	2C/33/31/38	H Shift	
01	HSZ	23	50/60Hz/RGB 50/RGB 60	35/35/35/35	H Size	
02	PAP	21	50/60Hz	25/25	Pin Amplitude	
03	CNP	29	50/60Hz	10/0C	Corner Pin	
04	TLT	20	50/60Hz	20/2D	Tilt	
05	VSL	20	50/60Hz	1F/1F	V Slope	
06	VAP	ID	50/60Hz	1C/1B	V Amplitude	
07	SCR	20	50/60Hz	16/16	S Correction	
08	VSF	20	50/60Hz	10/10	V Shift	
09	RDR	25		28	R Drive	
0A	GDR	20			G Drive	
0B	BDR	20			B Drive	
0C	F0	00	TV/Video/Teletext	00/00/00	ø1 Time Constant	
0D	AGC	06	TV/Video/Teletext	28/28/28	AGC Take Over	
0E	VSW	0	TV/Video/Teletext	0/1/0	Video Mute Switch	
0F	FOR	00		03	Forced Field Frequency	
10	DL	0			De-interlace	
11	POC	0			Fixed ø1 Synchro. mode	
12	COR	0	TV/Video/Teletext	01/00/00	Noise Coring	
13	VPX	00			Extra Bits (see below)	
14	PMX	27	TV/Video/Teletext	2B/2B/2B	Picture Maximum Data	
15	PMI	05		04	Picture Minimum Data	
16	SBR	4B			Sub Brightness	
17	SHU	07			Sub Hue	
18	SSH	01	TV/Video	01/03	Sub Sharpness	
19	SC1	1F	50/60Hz	26/29	Sub Color Lower	
1A	SC2	0B	50/60Hz	0C/0D	Sub Color Higher	
1B	AIP	40		3F	Adjustment IF-PLL	
1C	VZM	20		19	Vertical Zoom	
1D	WST	15			W/G Stereo Threshold	
1E	WBT	EA			W/G Bilingual Threshold	
1F	WLL	05			W/G Monaural Threshold	
20	ACG	1			AGC Switch auto/constant	
21	CDB	28			AGC Gain at Constant Mode	
22	FGP	1B			FM Prescale for B/G.I.D/K	
23	FMP	32			FM Prescale for M	
24	FMH	36			FM Prescale for HDEV Mode	
25	FMM	65			FM Prescale for HDEV Mode	
26	WGP	2A			W/G Prescale	
27	NIP	6D			NICAM Prescale	
28	SCP	3B			SCART Input Prescale	
29	SCV	2A			SCART Output Prescale	
2A	CRM	0			Carrier Muting on/off	
2B	ACO	1			Audio Clock-out on/off	
2C	WAC	00			W/G Agreement Count	
2D	NFT	50			Auto FM Switch Threshold	
2E	DLG	30			W/G Search Delay	
2F	DLN	20			NICAM Search Delay	
30	DLS	10			Stereo Status Read Delay	
31	SMX	73			DFP Volume Maximum	
32	ING	00	M System/non-M/Video		Input Gain	
33	VOM	01	M System only		Volume Output Gain	
34	TXH	01			Teletext Horizontal Position	
35	BKP	00			Picture Data at Blanking OFF	
36	ODL	10			Power ON Delay	
37	OFR	00			RGB Output Time (STBY OFF)	
38	OFM	00			RGB Output Time (AC OFF)	

Item No.	Adj Item	Initial Data	Note for Different Data	Standard Data		Function	Device
39	OSH	0A		0		OSD H Position	
3A	DKS	1				D/K Stereo enable/disable	
3B	MUT	0				Muting on/off at No Sync	
3C	ABL	0				Bright ABL Switch	
3D	SCM	0				SECAM Trap active/inactive	
3E	FBT	1				FBT L/S C/M strict/plain	
3F	OP0	2F		28 (2199)	2F (J21)	Optional Flags 0 (see below)	
40	OP1	0F		24 (2199) 04 (J21)		Optional Flags 1 (see below)	
41	OP2	00				Optional Flags 2 (see below)	

NOTE

- Note for Different Data Those are the standard data values written on the microprocessor. Therefore, the data values of the modes are stored respectively in the memory.
In case of a device replacement, adjustment by rewriting the data value is necessary for some items.
- 50 50 Hz data
- 60 60 Hz data
- Note for Different Data listed on the adjustment item table are reference values, therefore it is different for every model.

Option Note

13. VPX	bit 7	bit 6	bit 5	bit 4	bit 3	bit 2	bit 1	bit 0
Item	HCO	EVG	SBL	PRD	–	–	–	VID
Initial data	0	0	0	0	0	0	0	0

HCO EHT Tracking Mode 1 = on V and E–W, 0 = only on V 0A (7)
 EVG Enable Vertical Guard 1 = enable, 0 = disable 0A (6)
 SBL Service Blanking 1 = active, 0 = inactive 0B (7)
 PRD Over-voltage Protection Detection 1 = enable, 0 = disable 0B (6)
 VID Video Ident Mode 1 = not for ø1-loop, 0 = for ø1-loop 09 (7)

3A. OP0	bit 7	bit 6	bit 5	bit 4	bit 3	bit 2	bit 1	bit 0
Item	No TOP	AV input		AVMUT	B/G	I	D/K	M
Initial data	0	1	0	0	1	1	1	1

AV Input 0 0 no AV input model 0 1 1 AV input model
 1 0 2 AV input model 1 1 2 AV input and RGB input model
 No TOP (for teletext model) 1 = only FLOF available, 0 = both FLOF and TOP available
 AVMUT 1 = AV multi is always muted if no signal input, 0 = not muted always
 Other optional bits are effective if set to 1.

3B. OP1	bit 7	bit 6	bit 5	bit 4	bit 3	bit 2	bit 1	bit 0
Item	–	–	HDEV	1 V-Curve	XTAL SEL		SECAM	2nd Lang.
Initial data	0	0	0	0	1	1	1	1

XTAL SEL 0 0 only 4.43 XTAL 0 1 only 3.58 XTAL
 1 0 (not used) 1 1 both 4.43 and 3.58 XTAL
 1 V-Curve (for monaural model)
 1 = using common volume curve for every mode and every TV system
 0 = another volume curve available for video mode and M system
 HDEV 1 = High Deviation Mode switch available, 0 = not available
 Other optional bits are effective if set to 1.

3C. OP2	bit 7	bit 6	bit 5	bit 4	bit 3	bit 2	bit 1	bit 0
Item	–	–	No Bal.	TV Out	Hotel	VM	D.B.F.B.	Thai Bil.
Initial data	0	0	0	0	0	0	0	0

No Bal. (for AV stereo model) 1 = no balance in analog select items, 0 = balance included
 Other optional bits are effective if set to 1.
 Hotel TV mode should be switched with remote commander from STBY condition as below.
 Hotel TV on : push “display”, “8”, “vol +” and “power” sequentially
 Hotel TV off : push “display”, “8”, “vol –” and “power” sequentially

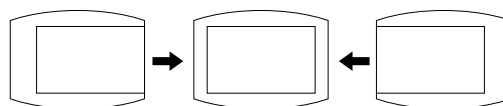
5-3. A BOARD ADJUSTMENT AFTER IC003 (MEMORY) REPLACEMENT

1. Enter to Service Mode.
2. Press commander buttons **[5]** and **[0]** (Data Initialize), and **[2]** and **[0]** (Data Copy) to initialize the data.
3. Call each item number, and check if the respective screen shows the normal picture.
In case some items are not well-adjusted, give them fine adjustment.
Write the data per each item number (**[MUTING]** + **[0]**).
4. Select item numbers “3E” (OP0), “3F” (OP1) and “40” (OP2) and respectively set the bit per model with command buttons **[3]** and **[6]**.
5. Press commander buttons **[8]** and **[0]** (Test Normal) to return to the data that was set on the shipment from the factory.
(= Cancel Service Mode.)

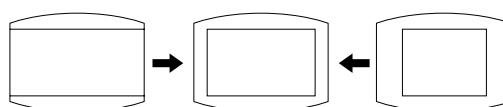
5-4. PICTURE DISTORTION ADJUSTMENT

Item Number 00 – 08

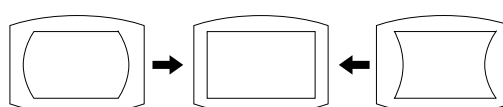
00 HSF (H SHIFT)



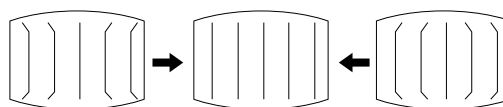
01 HSZ (H SIZE)



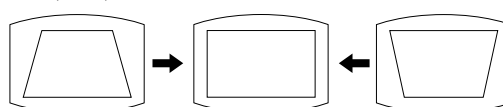
02 PAP (PIN AMPLITUDE)



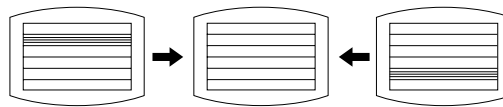
03 CNP (CORNER PIN)



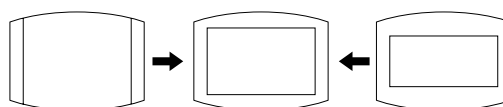
04 TLT (TILT)



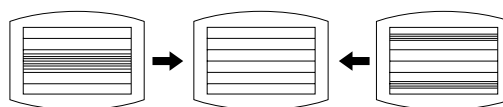
05 VSL (V SLOPE)



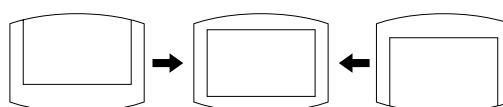
06 VAP (V AMPLITUDE)



07 SCR (S CORRECTION)

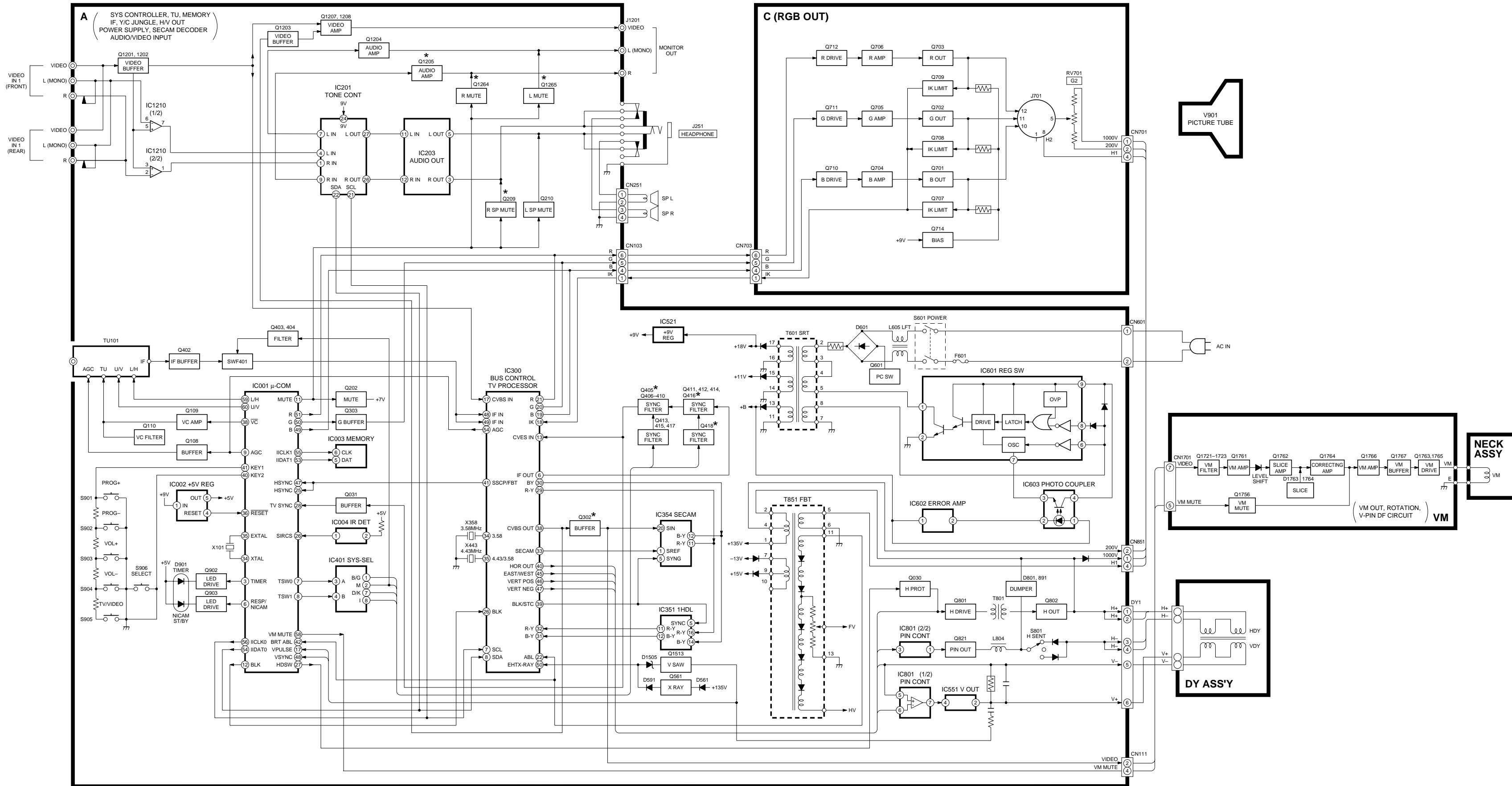


08 VSF (V SHIFT)

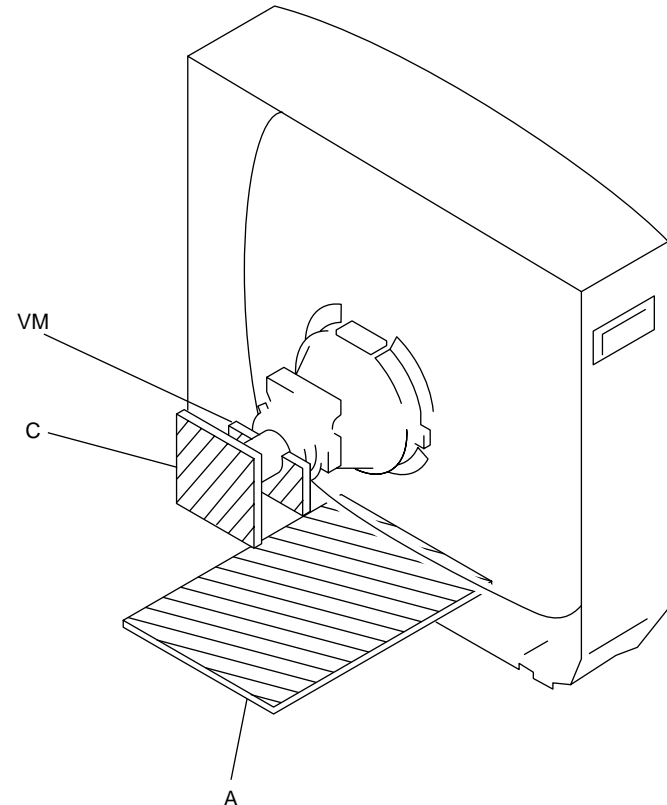


6-1. BLOCK DIAGRAM

SECTION 6
DIAGRAMS



6-2. CIRCUIT BOARDS LOCATION



6-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

- Note:**
- All capacitors are in μF unless otherwise noted.
 - All electrolytic capacitors are rated at 50V unless otherwise noted.
 - All resistors are in ohms.
 - $k\Omega = 1000\Omega$, $M\Omega = 1000k\Omega$
 - Indication of resistance, which does not have one for rating electrical power, is as follows.
Pitch: 5 mm
Rating electrical power 1/4W (CHIP: 1/10W)
 - : nonflammable resistor.
 - : internal component.
 - : panel designation, or adjustment for repair.
 - All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
 - Readings are taken with a color-bar signal input.
no mark : PAL
() : SECAM
[] : NTSC 3.58
« » : NTSC 4.43
 - Readings are taken with a 10 M Ω digital multimeter.
 - Voltage are dc with respect to ground unless otherwise noted.
 - Voltage variations may be noted due to normal production tolerances.
 - All voltages are in V.
 - * : Can not be measured.
 - Circled numbers are waveform reference.
 - : B + bus.
 - : B - bus.
 - : signal path.

Reference information		
RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: RW	NONFLAMMABLE WIREWOUND
	: *	ADJUSTMENT RESISTOR
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

Note:The component identified by shading and mark Δ are critical for safety. Replace only with part number specified.

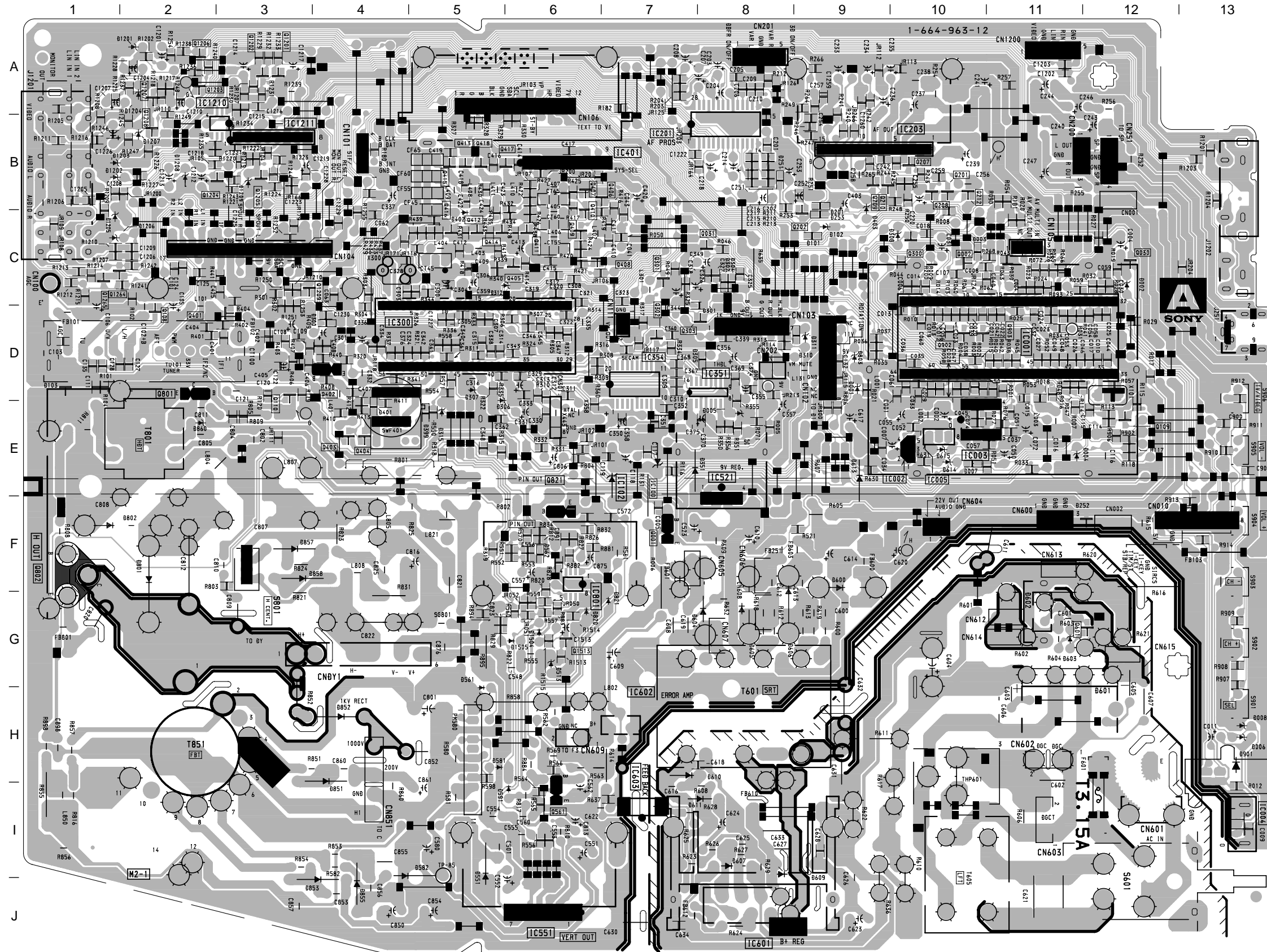
Terminal name of semiconductors in silk screen
printed circuit (*)

	Device	Printed symbol	Terminal name	Circuit
①	Transistor		Collector Base Emitter	
②	Transistor		Collector Base Emitter	
③	Diode		Cathode Anode	
④	Diode		Cathode Anode (NC)	
⑤	Diode		Cathode Anode (NC)	
⑥	Diode		Common Anode Cathode	
⑦	Diode		Common Anode Cathode	
⑧	Diode		Common Anode Anode	
⑨	Diode		Common Anode Anode	
⑩	Diode		Common Cathode Cathode	
⑪	Diode		Common Cathode Cathode	
⑫	Diode		Anode Anode Cathode	
⑬	Transistor (FET)		Drain Source Gate	
⑭	Transistor (FET)		Drain Source Gate	
⑮	Transistor (FET)		Source Drain Gate	
⑯	Transistor		Emitter Collector Base	
⑰	Transistor		C1B1E1 E2B2C1	
⑱	Transistor		C1B2E2 E1B1C2	
⑲	Transistor		C1 B2 E2 E1 B1 C2	
⑳	Transistor		C1 B2 E2 E1 B1 C2	
㉑	Transistor		E2 B1 E1 C2 C1B2	
㉒	Transistor		(B2) B1 E1 E2 C1 C2	
㉓	Transistor		(B2) E2 E1 B1 C2 C1	
-	Discrete semiconductor			

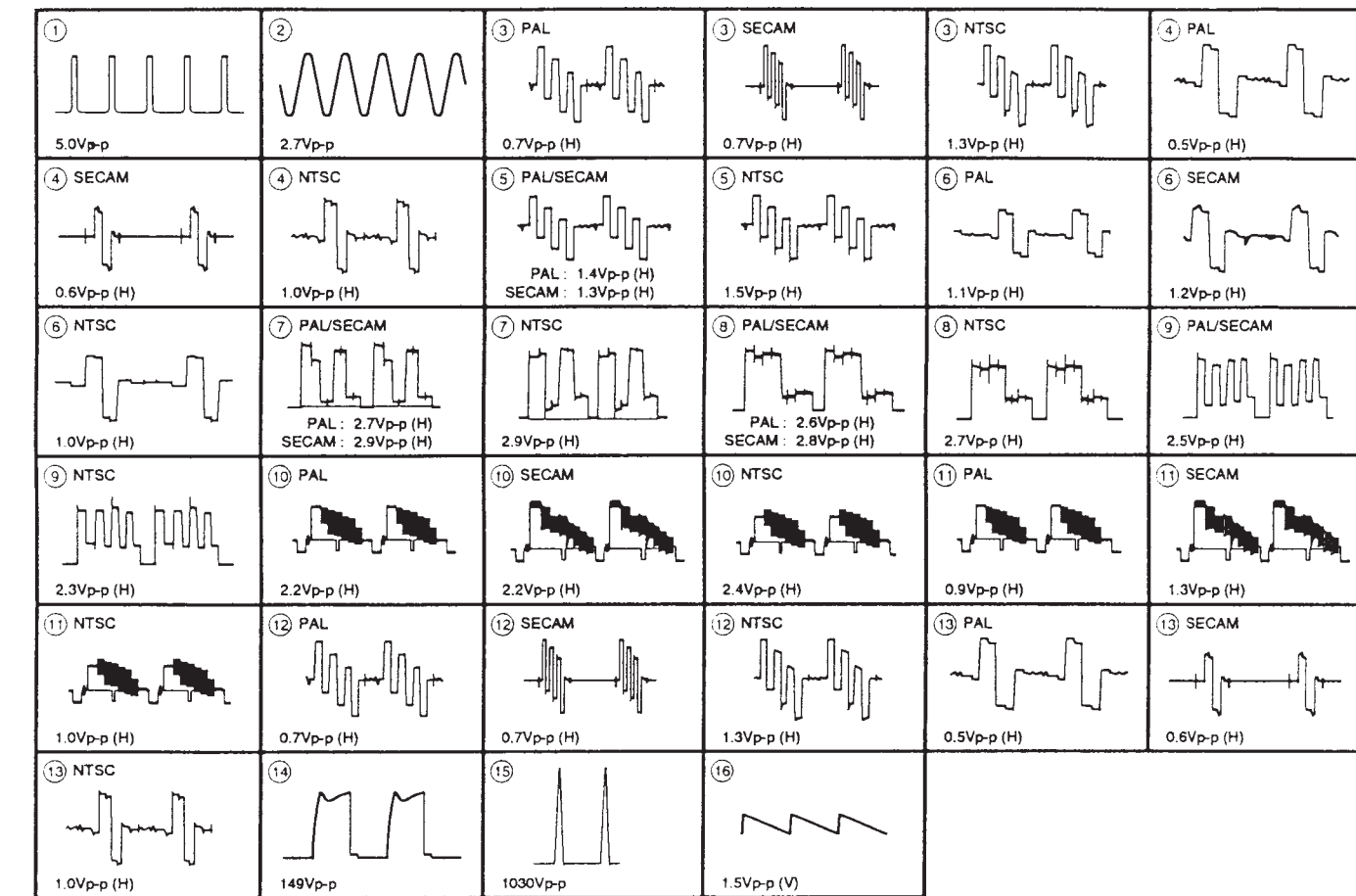
(Chip semiconductors that are not actually used are included.) Ver.1.5

– A BOARD –

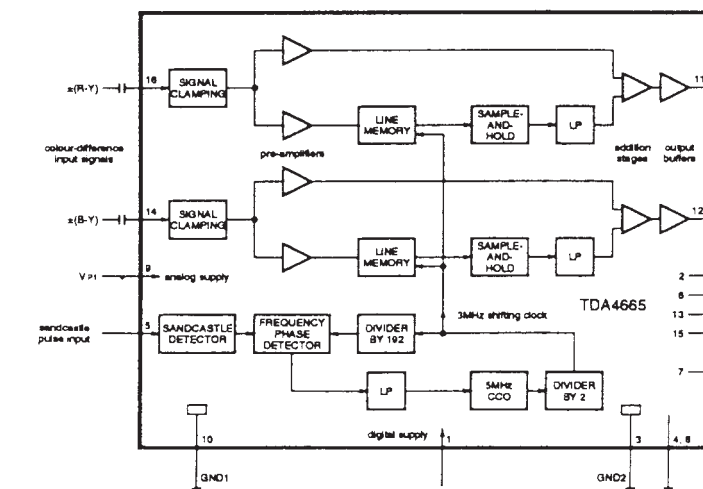
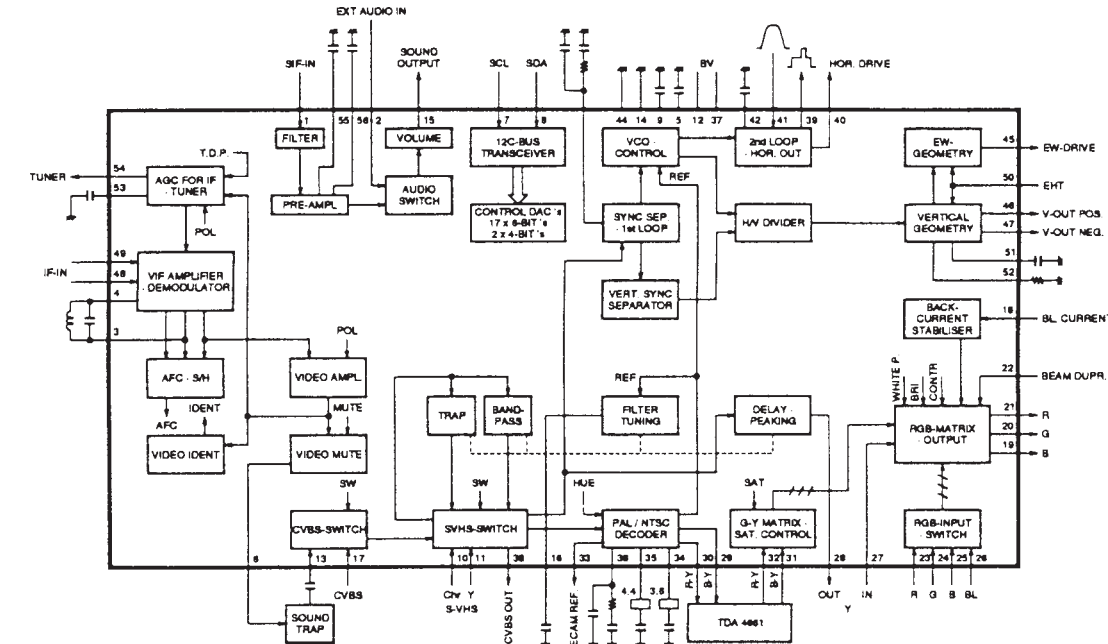
IC		Q1208 B-2 ①	Q1209 C-4 ①	Q1264 C-1 ①	Q1265 C-1 ①	Q1513 G-6 ①
IC001 D-11	IC002 E-10	DIODE				
IC003 E-10	IC004 I-13					
IC100 E-7	IC201 B-8	D001 D-9	*			
IC203 B-10	IC300 D-4	D002 C-12				
IC351 D-8	IC354 D-7	D003 C-10 ③				
IC401 B-7	IC521 E-8	D005 E-8				
IC551 J-6	IC601 J-8	D008 H-13				
IC601 J-8	IC602 H-7	D103 D-1 ⑥				
IC602 H-7	IC603 H-7	D201 B-9 ③				
IC801 F-6	IC1210 A-2	D251 B-8 ③				
		D252 F-12 ④				
		D253 C-9 ⑥				
		D301 D-8 ⑥				
		D305 D-8 ③				
		D306 E-6				
		D307 D-5				
		D308 C-10				
		D310 D-9 ③				
		D311 D-9				
		D312 C-6				
		D315 E-5				
		D351 E-8				
		D399 E-5 ③				
		D401 E-4 ③				
		D402 C-5				
		D403 C-9				
		D513 G-6				
		D551 I-5				
		D561 G-5				
		D591 I-6				
		D601 H-12				
		D604 G-8				
		D605 G-8				
		D606 G-9				
		D607 I-8				
		D609 I-9				
		D610 H-8				
		D611 I-8				
		D613 E-9				
		D801 F-2				
		D802 F-2				
		D851 H-4				
		D852 H-4				
		D853 I-3				
		D855 J-4				
		D857 F-3				
		D858 F-4				
		D860 E-2				
		D901 H-13				
		D1201 A-2				
		D1202 B-1				
		D1203 B-1				
		D1207 B-2				
		D1208 B-2				
		D1209 B-3				
		D1504 G-6				
		D1505 G-6				



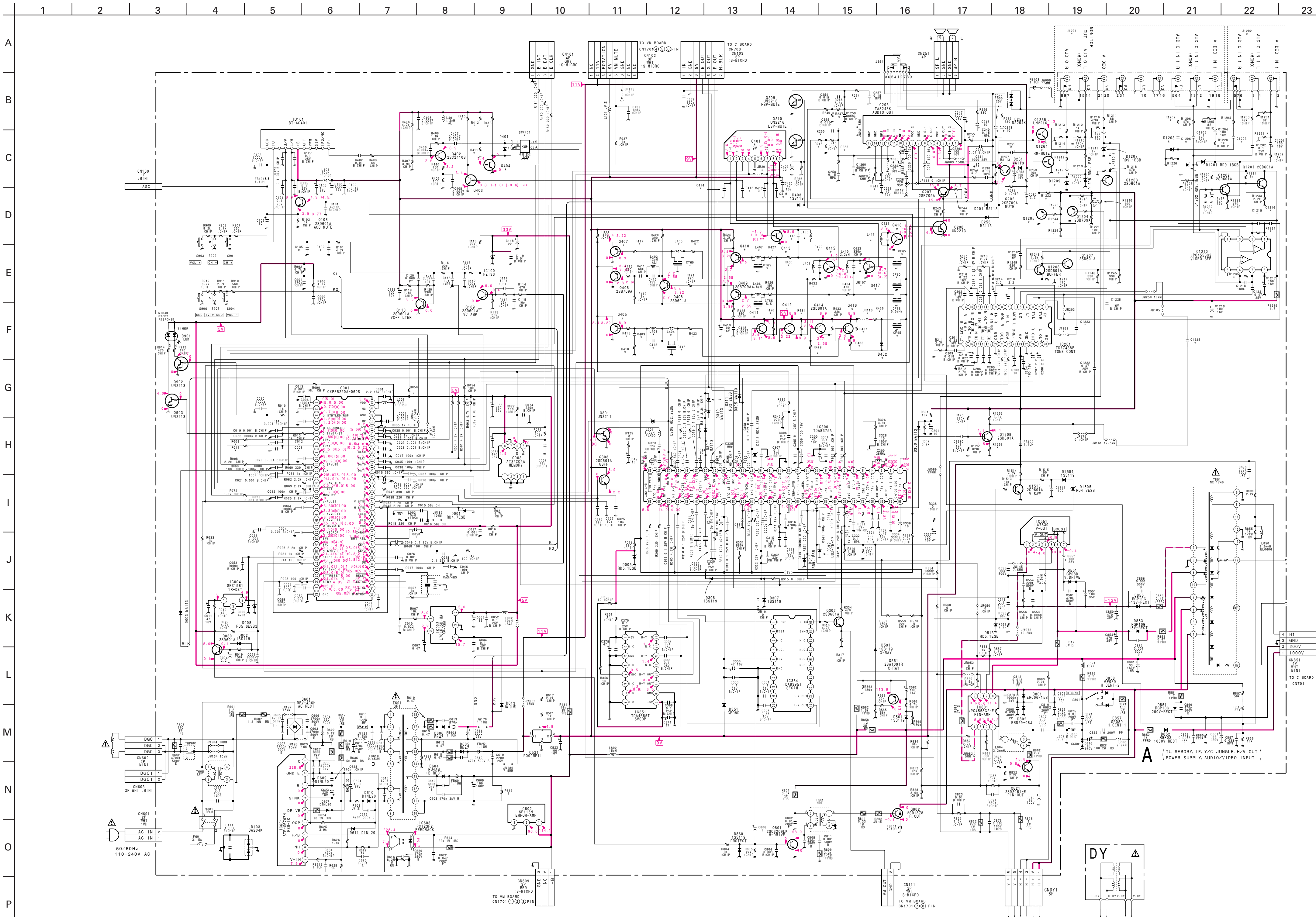
NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Please pay attention while inspecting or repairing it to prevent an electric shock.



A BOARD IC351 TDA4665T-T



(1) Schematic Diagram of A Board



A BOARD * MARK LIST

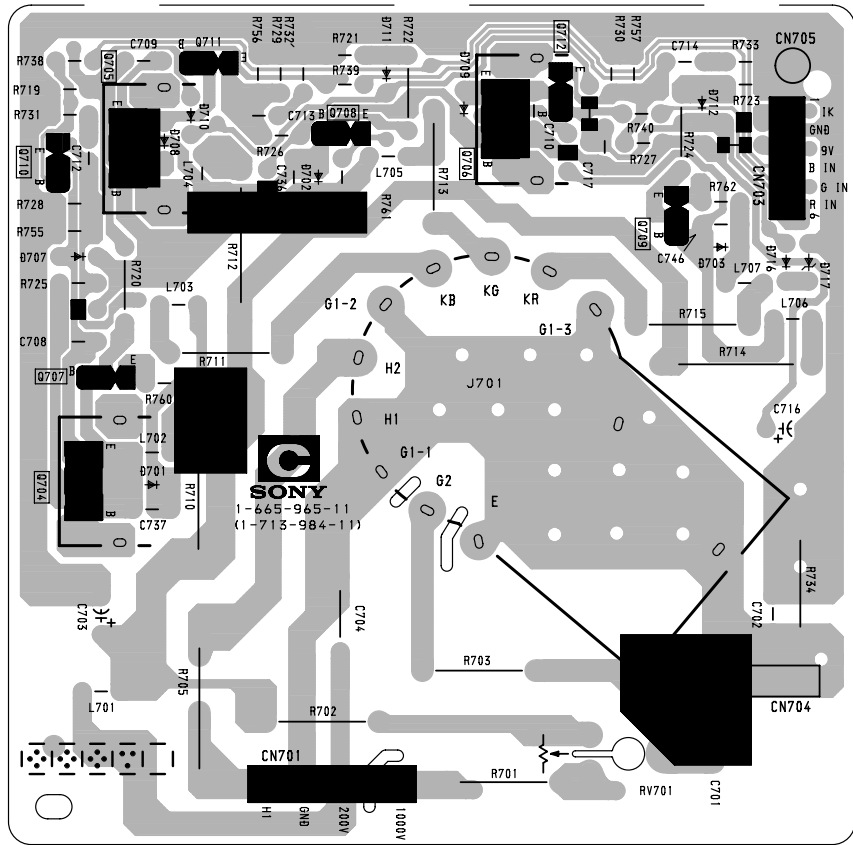
	KV-2199M5J	KV-J21MF2J	KV-2199M5J	KV-J21MF2J
C003	#	100p 50V : CHIP	Q413	#
C012	#	100p 50V : CHIP	Q415	#
C409	#	47p 50V CH : CHIP	Q416	#
C412	#	68p 50V CH : CHIP	Q417	#
C414	#	100p 50V : CHIP	Q418	#
C416	#	100p 50V : CHIP	Q1205	#
C417	#	100p 50V : CHIP	Q1264	#
C418	#	390p 50V : CHIP	R009	#
C419	#	100p 50V : CHIP	R014	#
C422	#	330p 50V CH : CHIP	R058	#
C424	#	470p 50V CH : CHIP	R247	10k : CHIP
C1203	#	0.1 25V B : CHIP	R248	10k : CHIP
C1206	#	0.1 25V B : CHIP	R249	15k : CHIP
C1212	#	1 50V	R250	15k : CHIP
C1215	#	180p 50V B : CHIP	R264	4.7k : CHIP
C1216	#	0.47 25V B : CHIP	R265	4.7k : CHIP
C1223	#	1 16V B : CHIP	R410	#
C1225	0.47 25V	#	R411	#
CF45	#	1-527-943-32	R412	#
CF60	#	1-567-100-22	R413	#
CF65	#	1-567-101-22	R415	#
CT45	#	1-579-690-21	R417	#
CT60	#	1-409-429-21	R418	#
CT65	#	1-409-327-21	R422	#
D401	#	MA77-TX	R423	#
D402	#	ISS119-25TD	R427	#
D1203	#	RD9.1ES-T1B	R428	#
D1209	#	RD9.1ES-T1B	R429	390 : CHIP
IC401	#	LA7910	R430	#
J1201	4P	6P	R431	#
J1202	2P	3P	R432	#
JR107	0 : CHIP	#	R435	#
JR116	#	0 : CHIP	R436	#
JR203	0 : CHIP	#	R437	#
JV252	#	7.5MM	R1204	#
L403	#	12uH	R1207	#
L404	#	8.2uH	R1213	#
L405	#	8.2uH	R1214	#
L407	#	15uH	R1222	#
L408	#	1.5uH	R1223	#
L409	#	2.2uH	R1224	#
L411	#	2.7uH	R1226	#
Q403	#	UN2216-TX	R1234	#
Q404	#	UN2216-TX	R1235	39k : CHIP
Q405	#	2SB709A	R1242	#
Q407	#	2SB709A	R1244	#
Q410	#	2SB709A	R1253	1.5k : CHIP
Q411	#	2SD601A	SWF401	1-767-663-11
Q412	#	2SD601A		1-760-771-11

: Not Used

PRINTED WIRING BOARD

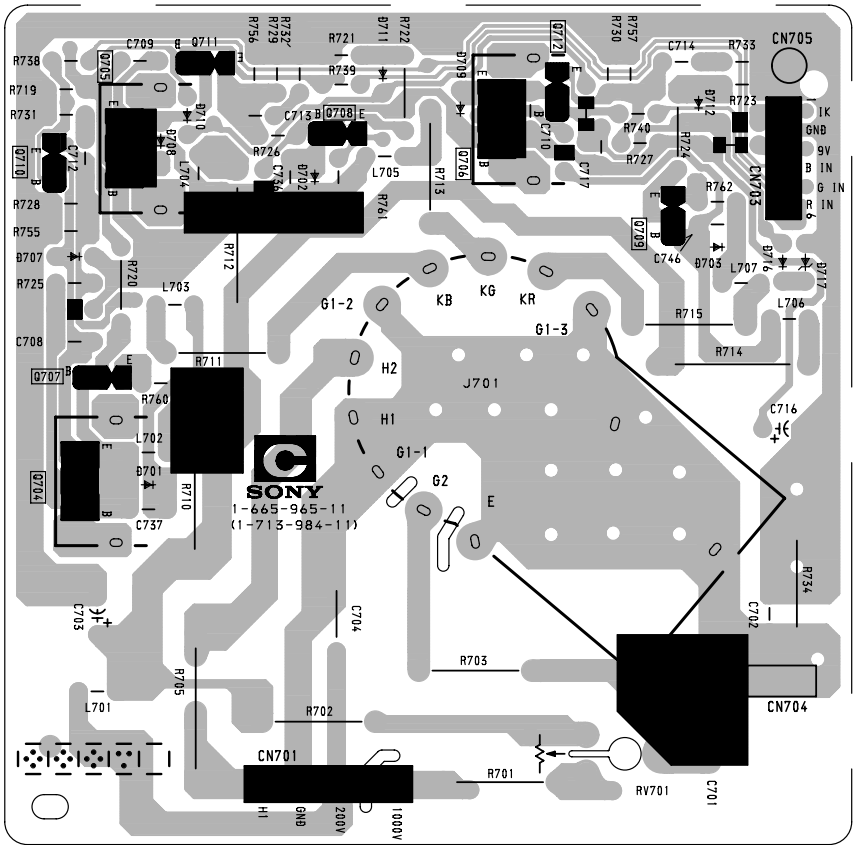
C [RGB OUT]

— C BOARD —

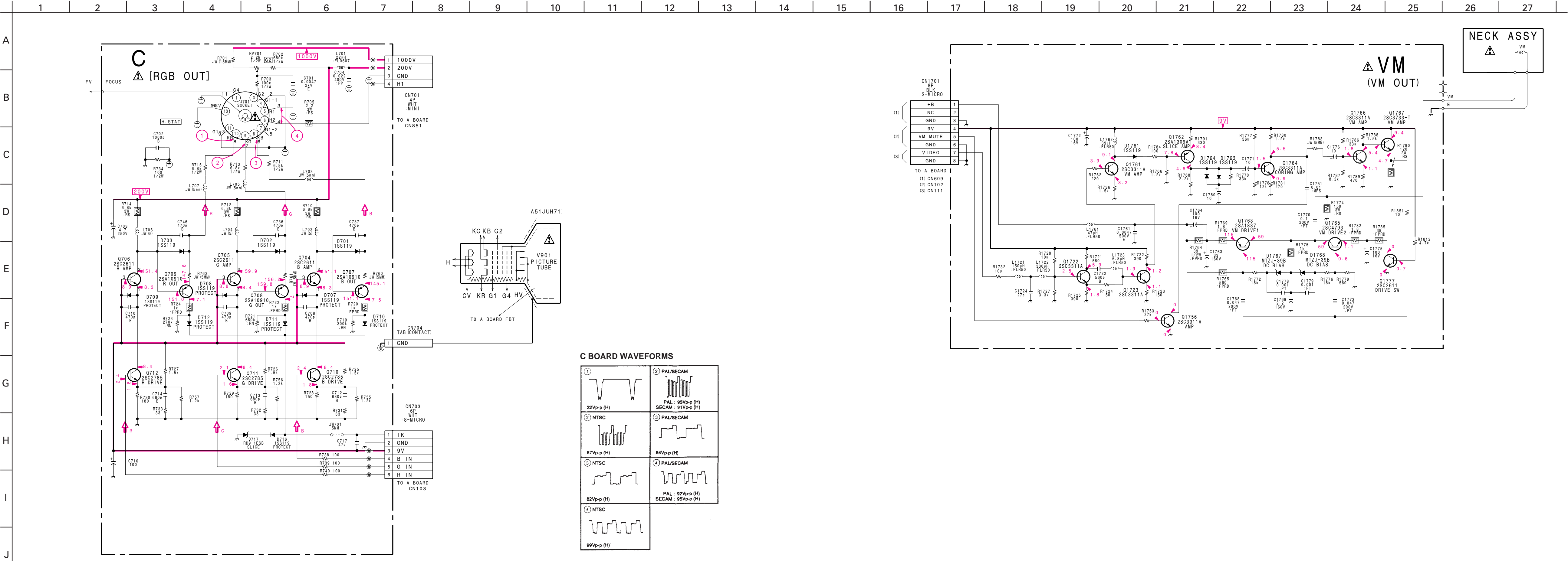


VM [VM OUT]

— VM BOARD —



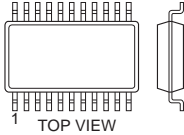
(2) Schematic Diagrams of C and VM Boards



6-4. SEMICONDUCTORS

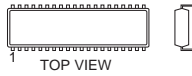
IC

AT24C04A-10PC-B
TDA7438D
μPC4558G2 (8PIN)



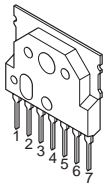
Small Outline L-leaded Package
Pin 8 ~ 98

CAT24C04P
CXP85220A-060S
TDA4665T
TDA8375A
TDA8395

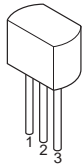


Dual In-line Package
Pin 6 ~ 98

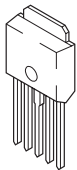
LA7830



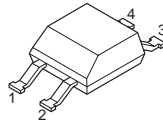
LA7910 (9PIN)



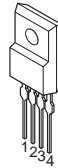
L78LR05D-MA



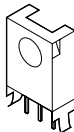
PC123F2



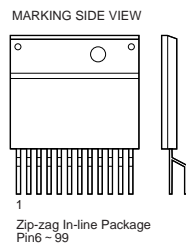
PQ09RF11



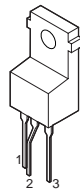
SBX1981-11



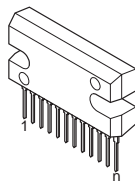
STR-S6707N (9PIN)



SE115N

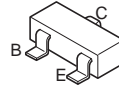


TA8248K

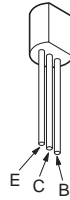


TRANSISTOR

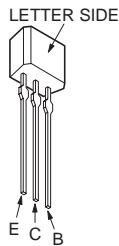
UN2211
UN2213
UN2216
2SB709A-QRS
2SD601A-Q



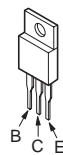
2SA1091-O
2SA1091-R



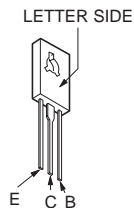
2SA1309A-QTA
2SC2410SN
2SC2785-HFE
2SC3311A-QRS-TA



2SA1837



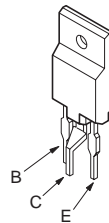
2SC2611



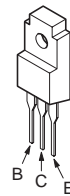
2SC3209LK
2SC3733-T



2SD1878-CA

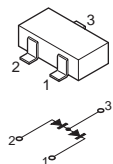


2SD2061-E

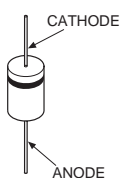


DIODE

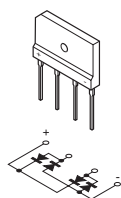
DA204K



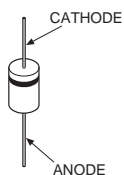
**D1NL20-TA2
EL1Z
GP08D
RGP02-17EL-6433
RGP10GPKG23**



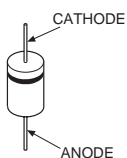
RBV-406H



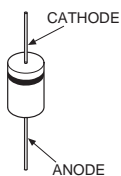
**ERC06-15S
RU4Z**



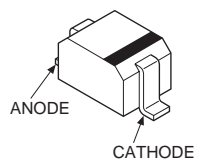
**ERD29-08J
RU4AM-T3**



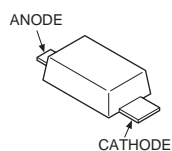
HZT33-02TE



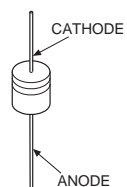
**MA113-(TX)
UDZ-TE-17-9.1B**



MA77-TX



**MTZJ-T-77-39B
RD.2.2ES-B1
RD.4.7ES-B1
RD.5.1ES-B1
RD5.6ESB2
RD8.2ES-B2
RD9.1ES-B1
1SS119-25**



SECTION 7

EXPLODED VIEWS

NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.

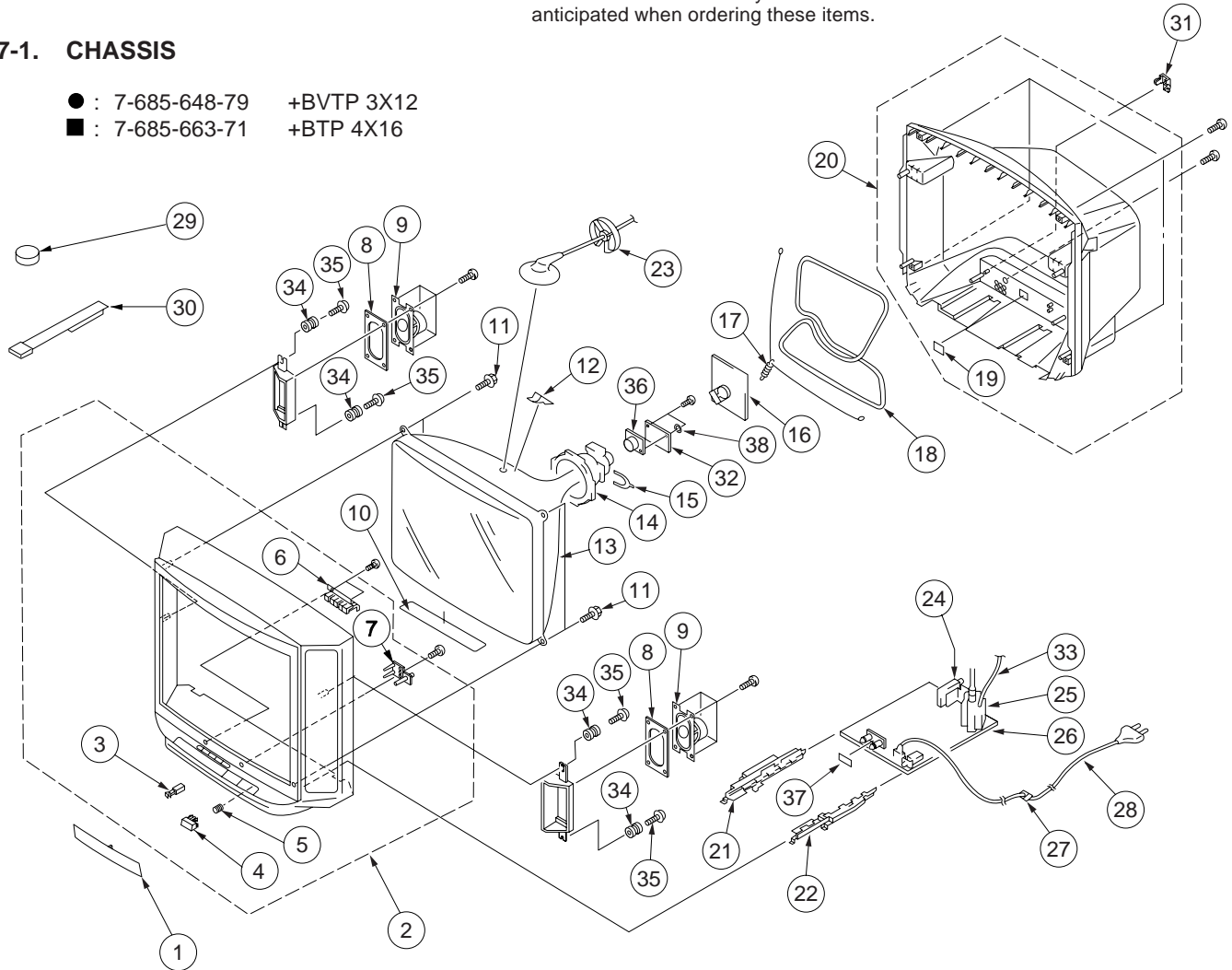
- The construction parts of an assembled part are indicated with a collation number in the remark column.

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and mark Δ are critical for safety. Replace only with part number specified.

7-1. CHASSIS

- : 7-685-648-79 +BVTP 3X12
 ■ : 7-685-663-71 +BTP 4X16



REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
1	4-062-935-01	DOOR, CONTROL (J21MF2J)		20	X-4035-299-1	COVER ASSY, REAR (2199M5J)	19
	4-062-937-01	DOOR, CONTROL (2199M5J)		21	* 4-055-548-01	GUIDE (L), PWB	
2	X-4035-298-1	BEZNET ASSY (2199M5J)	3-7	22	* 4-055-549-01	GUIDE (R), PWB	
	X-4035-381-1	BEZNET ASSY (J21MF2J)	3-7				
3	4-047-464-01	CATCHER, PUSH		23	3-704-372-01	HOLDER, HV CABLE	
				24	8-598-323-10	TUNER BT-AG401	
4	4-055-546-31	BUTTON, POWER		25	Δ 1-453-250-11	TRANSFORMER ASSY, FLYBACK	
5	4-036-405-11	SPRING, COMPRESSION				(NX-1746/M3A)	
6	4-060-144-01	BUTTON, MULTI		26	* A-1298-433-A	A BOARD, COMPLETE (2199M5J)	
7	* 4-060-143-01	GUIDE, LIGHT			* A-1298-434-A	A BOARD, COMPLETE (J21MF2J)	
8	4-052-433-01	CUSHION, SPEAKER		27	Δ 4-389-778-01	HOLDER, AC CORD	
				28	Δ 1-574-062-11	CORD, POWER (WITH CONNECTOR)	
9	1-503-902-11	SPEAKER (15X6.5 CM)				2.5A/250V	
10	4-372-556-11	SHEET, BLOTING		29	1-452-032-00	MAGNET, DISK ; 10mm ϕ	
11	4-057-862-01	SCREW, TAPPING 5+CROWN WASHER		30	4-051-736-21	PIECE A(90), CONV. CORRECT	
12	4-046-600-01	SPACER, DY		31	4-049-130-01	CLAMPER, CORD	
13	Δ 8-738-774-05	PICTURE TUBE 21PXD(SDS) (A51JUH71X)		32	* A-1342-405-A	VM BOARD, COMPLETE	
14	Δ 8-451-280-33	DEFLECTION YOKE (Y21PXA2)		33	1-900-212-58	LEAD ASSY, FOCUS	
15	1-452-277-00	MAGNET, BMC		34	4-374-745-21	CUSHION (A)	
16	* A-1331-748-A	C BOARD, COMPLETE		35	4-302-404-03	SCREW (WASHER HEAD) (+P 4X16)	
17	4-369-318-00	SPRING, TENSION		36	Δ 1-452-509-51	NECK ASSY, PICTURE TUBE (NA308)	
18	Δ 1-409-942-11	COIL, DEMAGNETIZATION		37	4-063-543-01	SPACER	
19	4-049-416-01	SHEET, BLIND		38	4-612-010-01	WASHER, FIBER	
20	X-4034-787-1	REAR COVER ASSY (J21MF2J)	19				

SECTION 8

ELECTRICAL PARTS LIST

A

NOTE:

The components identified by shading and mark **A** are critical for safety.
Replace only with part number specified.

• The components identified by **A** in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.

• Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

• All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS

- All resistors are in ohms
- F : nonflammable

When indicating parts by reference number, please include the board name.

• CAPACITORS

PF : $\mu\mu$ F

• There are some cases the reference number on one board overlaps on the other board. Therefore, when ordering parts by the reference number, please include the board name.


REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
	* A-1298-433-A	A BOARD, COMPLETE (KV-2199M5J) *****		C052	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
				C053	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V
	* A-1298-434-A	A BOARD, COMPLETE (KV-J21MF2J) *****		C054	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V
				C055	1-124-480-11	ELECT 470MF	20% 25V
				C056	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V
	* 4-049-131-01	CASE (A), SHIELD		C057	1-163-243-11	CERAMIC CHIP 47PF	5% 50V
	4-382-854-11	SCREW (M3X10), P, SW (+)		C058	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
		<CAPACITOR>		C059	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C001	1-163-011-11	CERAMIC CHIP 0.0015MF	10% 50V	C060	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V
C002	1-126-965-11	ELECT 22MF	20% 50V	C061	1-164-505-11	CERAMIC CHIP 2.2MF	16V
C003	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C064	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V
			(J21MF2J)	C072	1-124-480-11	ELECT 470MF	20% 25V
C004	1-126-961-11	ELECT 2.2MF	20% 50V	C074	1-163-001-11	CERAMIC CHIP 220PF	10% 50V
C006	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C101	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V
				C103	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V
C007	1-126-959-11	ELECT 0.47MF	20% 50V	C105	1-104-665-11	ELECT 100MF	20% 16V
C008	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C106	1-126-964-11	ELECT 10MF	20% 50V
C009	1-163-133-00	CERAMIC CHIP 470PF	5% 50V				
C010	1-163-037-11	CERAMIC CHIP 0.022MF	10% 50V	C108	1-126-767-11	ELECT 1000MF	20% 16V
C011	1-126-967-11	ELECT 47MF	20% 16V	C109	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V
				C111	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V
C012	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C114	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
			(J21MF2J)	C115	1-163-227-11	CERAMIC CHIP 10PF	0.5PF 50V
C013	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C116	1-136-165-00	FILM 0.1MF	5% 50V
C014	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C117	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C015	1-101-884-00	CERAMIC 56PF	5% 50V	C118	1-126-965-11	ELECT 22MF	20% 50V
C016	1-101-884-00	CERAMIC 56PF	5% 50V	C119	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
				C120	1-130-493-00	MYLAR 0.068MF	5% 50V
C017	1-163-117-00	CERAMIC CHIP 100PF	5% 50V				
C018	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C121	1-130-493-00	MYLAR 0.068MF	5% 50V
C019	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C122	1-104-665-11	ELECT 100MF	20% 16V
C020	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C124	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C021	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C125	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
				C127	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C022	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V				
C023	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C128	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C024	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C132	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C025	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C201	1-164-489-11	CERAMIC CHIP 0.22MF	10% 16V
C026	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C202	1-164-489-11	CERAMIC CHIP 0.22MF	10% 16V
				C203	1-126-964-11	ELECT 10MF	20% 50V
C027	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V				
C028	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C204	1-104-665-11	ELECT 100MF	20% 16V
C029	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C205	1-164-161-11	CERAMIC CHIP 0.0022MF	10% 50V
C034	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	C206	1-164-161-11	CERAMIC CHIP 0.0022MF	10% 50V
C035	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C207	1-126-961-11	ELECT 2.2MF	20% 50V
				C208	1-126-961-11	ELECT 2.2MF	20% 50V
C036	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V				
C037	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C209	1-163-024-00	CERAMIC CHIP 0.018MF	10% 50V
C038	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C210	1-163-037-11	CERAMIC CHIP 0.022MF	10% 50V
C040	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C213	1-163-024-00	CERAMIC CHIP 0.018MF	10% 50V
C042	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C214	1-126-961-11	ELECT 2.2MF	20% 50V
				C215	1-163-037-11	CERAMIC CHIP 0.022MF	10% 50V
C044	1-163-117-00	CERAMIC CHIP 100PF	5% 50V				
C045	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C216	1-164-489-11	CERAMIC CHIP 0.22MF	10% 16V
C046	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C217	1-164-489-11	CERAMIC CHIP 0.22MF	10% 16V
C047	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C218	1-126-961-11	ELECT 2.2MF	20% 50V
C048	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	C220	1-126-965-11	ELECT 22MF	20% 50V
				C233	1-126-967-11	ELECT 47MF	20% 16V
C049	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V				
C050	1-126-960-11	ELECT 1MF	20% 50V	C234	1-126-967-11	ELECT 47MF	20% 16V
C051	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C235	1-104-665-11	ELECT 100MF	20% 16V



The components identified by shading and mark Δ are critical for safety.
Replace only with part number specified.

A

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
C236	1-124-484-11	ELECT	220MF 20% 35V	C370	1-164-004-11	CERAMIC CHIP 0.1MF 10% 25V	
C237	1-104-665-11	ELECT	100MF 20% 16V	C374	1-124-910-11	ELECT 47MF 20% 50V	
C238	1-136-167-00	FILM	0.15MF 5% 50V	C375	1-124-910-11	ELECT 47MF 20% 50V	
C239	1-104-665-11	ELECT	100MF 20% 16V	C376	1-107-823-11	CERAMIC CHIP 0.47MF 10% 16V	
C240	1-136-167-00	FILM	0.15MF 5% 50V	C402	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V	
C241	1-126-942-61	ELECT	1000MF 20% 25V	C403	1-126-965-11	ELECT 22MF 20% 50V	
C242	1-164-232-11	CERAMIC CHIP	0.01MF 10% 50V	C405	1-163-017-00	CERAMIC CHIP 0.0047MF 10% 50V	
C243	1-126-964-11	ELECT	10MF 20% 50V	C406	1-163-017-00	CERAMIC CHIP 0.0047MF 10% 50V	
C244	1-126-942-61	ELECT	1000MF 20% 25V	C407	1-163-017-00	CERAMIC CHIP 0.0047MF 10% 50V	
C246	1-126-964-11	ELECT	10MF 20% 50V	C408	1-163-017-00	CERAMIC CHIP 0.0047MF 10% 50V	
C247	1-126-942-61	ELECT	1000MF 20% 25V	C409	1-163-243-11	CERAMIC CHIP 47PF 5% 50V	(J21MF2J)
C252	1-126-961-11	ELECT	2.2MF 20% 50V	C410	1-163-237-11	CERAMIC CHIP 27PF 5% 50V	
C253	1-104-665-11	ELECT	100MF 20% 16V	C411	1-163-113-00	CERAMIC CHIP 68PF 5% 50V	
C254	1-163-023-00	CERAMIC CHIP	0.015MF 10% 50V	C412	1-163-113-00	CERAMIC CHIP 68PF 5% 50V	(J21MF2J)
C255	1-163-023-00	CERAMIC CHIP	0.015MF 10% 50V	C413	1-104-665-11	ELECT 100MF 20% 16V	
C257	1-136-167-00	FILM	0.15MF 5% 50V	C414	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	(J21MF2J)
C258	1-136-167-00	FILM	0.15MF 5% 50V	C415	1-163-017-00	CERAMIC CHIP 0.0047MF 10% 50V	
C300	1-126-967-11	ELECT	47MF 20% 16V	C416	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	(J21MF2J)
C301	1-126-964-11	ELECT	10MF 20% 50V	C417	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	(J21MF2J)
C304	1-164-004-11	CERAMIC CHIP	0.1MF 10% 25V	C418	1-163-131-00	CERAMIC CHIP 390PF 5% 50V	(J21MF2J)
C305	1-164-004-11	CERAMIC CHIP	0.1MF 10% 25V	C419	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	(J21MF2J)
C306	1-164-004-11	CERAMIC CHIP	0.1MF 10% 25V	C420	1-126-967-11	ELECT 47MF 20% 16V	
C307	1-164-004-11	CERAMIC CHIP	0.1MF 10% 25V	C422	1-163-263-11	CERAMIC CHIP 330PF 5% 50V	(J21MF2J)
C308	1-164-004-11	CERAMIC CHIP	0.1MF 10% 25V	C423	1-163-263-11	CERAMIC CHIP 330PF 5% 50V	(J21MF2J)
C309	1-164-004-11	CERAMIC CHIP	0.1MF 10% 25V	C424	1-163-133-00	CERAMIC CHIP 470PF 5% 50V	(J21MF2J)
C310	1-164-004-11	CERAMIC CHIP	0.1MF 10% 25V	C501	1-102-228-00	CERAMIC 470PF 10% 500V	
C311	1-163-231-11	CERAMIC CHIP	15PF 5% 50V	C523	1-104-665-11	ELECT 100MF 20% 16V	
C312	1-163-231-11	CERAMIC CHIP	15PF 5% 50V	C548	1-106-220-00	MYLAR 0.1MF 10% 100V	
C313	1-104-665-11	ELECT	100MF 20% 16V	C551	1-126-968-11	ELECT 100MF 20% 35V	
C314	1-164-161-11	CERAMIC CHIP	0.0022MF 10% 50V	C552	1-126-968-11	ELECT 100MF 20% 35V	
C315	1-107-823-11	CERAMIC CHIP	0.47MF 10% 16V	C553	1-163-019-00	CERAMIC CHIP 0.0068MF 10% 50V	
C316	1-102-125-00	CERAMIC	0.0047MF 10% 50V	C554	1-102-244-00	CERAMIC 220PF 10% 500V	
C319	1-164-004-11	CERAMIC CHIP	0.1MF 10% 25V	C555	1-101-804-00	CERAMIC 10PF 5% 500V	
C320	1-164-004-11	CERAMIC CHIP	0.1MF 10% 25V	C562	1-104-665-11	ELECT 100MF 20% 16V	
C321	1-164-004-11	CERAMIC CHIP	0.1MF 10% 25V	C602	1-161-830-00	CERAMIC 0.0047MF 500V	
C322	1-216-295-91	SHORT	0	C603	1-161-830-00	CERAMIC 0.0047MF 500V	
C323	1-163-235-11	CERAMIC CHIP	22PF 5% 50V	C604	1-117-752-11	ELECT(BLOCK) 330MF 20% 450V	
C324	1-164-505-11	CERAMIC CHIP	2.2MF 16V	C605	1-161-830-00	CERAMIC 0.0047MF 500V	
C325	1-163-227-11	CERAMIC CHIP	10PF 0.5PF 50V	C606	1-161-830-00	CERAMIC 0.0047MF 500V	
C326	1-163-229-11	CERAMIC CHIP	12PF 5% 50V	C607	1-161-830-00	CERAMIC 0.0047MF 500V	
C327	1-163-227-11	CERAMIC CHIP	10PF 0.5PF 50V	C608	1-104-332-11	CERAMIC 470PF 10% 2KV	
C328	1-164-232-11	CERAMIC CHIP	0.01MF 10% 100V	C609	1-124-347-00	ELECT 100MF 20% 160V	
C329	1-163-016-00	CERAMIC CHIP	0.0039MF 10% 50V	C610	1-126-943-11	ELECT 2200MF 20% 25V	
C330	1-164-004-11	CERAMIC CHIP	0.1MF 10% 25V	C611	Δ 1-117-697-11	CERAMIC 470PF 10% 250V	
C331	1-126-964-11	ELECT	10MF 20% 50V	C612	1-102-228-00	CERAMIC 470PF 10% 500V	
C332	1-136-165-00	FILM	0.1MF 5% 50V	C613	1-102-824-00	CERAMIC 470PF 5% 50V	
C333	1-164-004-11	CERAMIC CHIP	0.1MF 10% 25V	C614	1-126-943-11	ELECT 2200MF 20% 25V	
C334	1-164-182-11	CERAMIC CHIP	0.0033MF 10% 50V	C616	1-102-228-00	CERAMIC 470PF 10% 500V	
C335	1-102-973-00	CERAMIC	100PF 5% 50V	C618	1-163-005-11	CERAMIC CHIP 470PF 10% 50V	
C336	1-126-964-11	ELECT	10MF 20% 50V	C619	1-162-116-00	CERAMIC 680PF 10% 2KV	
C337	1-104-665-11	ELECT	100MF 20% 16V	C621	Δ 1-104-705-51	FILM 0.1MF 20% 250V	
C338	1-107-823-11	CERAMIC CHIP	0.47MF 10% 16V	C622	1-106-383-00	MYLAR 0.047MF 10% 200V	
C339	1-163-121-00	CERAMIC CHIP	150PF 5% 50V	C623	1-126-934-11	ELECT 220MF 20% 16V	
C340	1-164-232-11	CERAMIC CHIP	0.01MF 10% 50V	C624	1-107-884-11	ELECT 1000MF 20% 16V	
C341	1-163-117-00	CERAMIC CHIP	100PF 5% 50V	C625	1-102-074-00	CERAMIC 0.001MF 10% 50V	
C342	1-164-004-11	CERAMIC CHIP	0.1MF 10% 25V	C627	1-162-116-00	CERAMIC 680PF 10% 2KV	
C344	1-126-964-11	ELECT	10MF 20% 50V	C628	1-163-133-00	CERAMIC CHIP 470PF 5% 50V	
C349	1-126-964-11	ELECT	10MF 20% 50V	C630	Δ 1-117-697-11	CERAMIC 470PF 10% 250V	
C350	1-126-967-11	ELECT	47MF 20% 16V	C631	1-161-830-00	CERAMIC 0.0047MF 500V	
C351	1-164-004-11	CERAMIC CHIP	0.1MF 10% 25V	C632	Δ 1-117-697-11	CERAMIC 470PF 10% 250V	
C352	1-164-489-11	CERAMIC CHIP	0.22MF 10% 16V	C633	1-161-754-00	CERAMIC 0.001MF 10% 3KV	
C358	1-164-004-11	CERAMIC CHIP	0.1MF 10% 25V				
C359	1-104-665-11	ELECT	100MF 20% 16V				
C361	1-163-009-11	CERAMIC CHIP	0.001MF 10% 50V				
C362	1-163-235-11	CERAMIC CHIP	22PF 5% 50V				
C367	1-164-004-11	CERAMIC CHIP	0.1MF 10% 25V				
C368	1-164-004-11	CERAMIC CHIP	0.1MF 10% 25V				
C369	1-164-004-11	CERAMIC CHIP	0.1MF 10% 25V				



The components identified by shading and mark  are critical for safety.
Replace only with part number specified.

REF. NO.	PART NO.	DESCRIPTION	REMARK
C634	1-163-005-11	CERAMIC CHIP 470PF	10% 50V
C801	1-123-024-21	ELECT 33MF	160V
C802	1-107-364-11	MYLAR 0.01MF	10% 200V
C804	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V
C805	1-102-244-00	CERAMIC 220PF	10% 500V
C806	1-126-960-11	ELECT 1MF	20% 50V
C807	1-136-569-11	FILM 1.2MF	5% 200V
C808	1-129-746-00	FILM 0.039MF	5% 400V
C809	1-162-115-00	CERAMIC 330PF	10% 2KV
C810	1-106-365-00	MYLAR 0.0082MF	10% 200V
C811	1-162-318-11	CERAMIC 0.001MF	10% 500V
C812	 1-117-646-11	FILM 12000PF	3% 1.2KV
C816	1-107-943-11	ELECT 10MF	20% 160V
C820	 1-161-731-81	CERAMIC 0.001MF	10% 2KV
C821	1-104-999-11	MYLAR 0.1MF	10% 200V
C822	1-136-111-00	FILM 1MF	5% 200V
C823	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C825	1-107-364-11	MYLAR 0.01MF	10% 200V
C850	1-124-480-11	ELECT 470MF	20% 25V
C852	1-104-574-11	CERAMIC 0.0047MF	10% 2KV
C853	1-162-318-11	CERAMIC 0.001MF	10% 500V
C854	1-124-480-11	ELECT 470MF	20% 25V
C856	1-162-318-11	CERAMIC 0.001MF	10% 500V
C857	1-136-159-00	FILM 0.033MF	5% 50V
C860	1-102-228-00	CERAMIC 470PF	10% 500V
C861	1-107-654-11	ELECT 33MF	20% 250V
C875	1-128-562-11	ELECT 47MF	20% 100V
C876	1-107-369-11	MYLAR 0.068MF	10% 100V
C891	1-163-007-11	CERAMIC CHIP 680PF	10% 50V
C898	1-137-150-11	MYLAR 0.01MF	10% 100V
C900	1-163-133-00	CERAMIC CHIP 470PF	5% 50V
C901	1-163-133-00	CERAMIC CHIP 470PF	5% 50V
C1201	1-104-665-11	ELECT 100MF	20% 16V
C1202	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C1203	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V (J21MF2J)
C1204	1-104-665-11	ELECT 100MF	20% 16V
C1205	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C1206	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V (J21MF2J)
C1210	1-104-665-11	ELECT 100MF	20% 16V
C1212	1-126-960-11	ELECT 1MF	20% 50V (J21MF2J)
C1213	1-126-960-11	ELECT 1MF	20% 50V
C1214	1-104-665-11	ELECT 100MF	20% 16V
C1215	1-163-257-11	CERAMIC CHIP 180PF	5% 50V (J21MF2J)
C1216	1-164-005-11	CERAMIC CHIP 0.47MF	25V (J21MF2J)
C1217	1-104-665-11	ELECT 100MF	20% 16V
C1218	1-163-257-11	CERAMIC CHIP 180PF	5% 50V
C1219	1-104-665-11	ELECT 100MF	20% 16V
C1221	1-164-005-11	CERAMIC CHIP 0.47MF	25V
C1222	1-164-005-11	CERAMIC CHIP 0.47MF	25V
C1223	1-164-346-11	CERAMIC CHIP 1MF	16V (J21MF2J)
C1225	1-164-005-11	CERAMIC CHIP 0.47MF	25V (2199M5J)
C1226	1-126-934-11	ELECT 220MF	20% 16V
C1228	1-164-346-11	CERAMIC CHIP 1MF	16V
C1230	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C1259	1-163-019-00	CERAMIC CHIP 0.0068MF	10% 50V
C1260	1-163-019-00	CERAMIC CHIP 0.0068MF	10% 50V
C1513	1-124-122-11	ELECT 100MF	20% 50V
<FILTER>			
CF45	1-527-943-00	FILTER, CERAMIC (J21MF2J)	
CF55	1-567-099-00	FILTER, CERAMIC	
CF60	1-567-100-00	FILTER, CERAMIC (J21MF2J)	

REF. NO.	PART NO.	DESCRIPTION	REMARK
CF65	1-567-101-11	FILTER, CERAMIC (J21MF2J)	
<CONNECTOR>			
CN100	* 1-508-784-00	PIN, CONNECTOR (5mm PITCH) 1P	
CN101	* 1-560-124-00	PLUG, CONNECTOR (2.5MM) 4P	
CN102	* 1-564-506-11	PLUG, CONNECTOR 3P	
CN103	* 1-564-509-11	PLUG, CONNECTOR 6P	
CN111	* 1-564-505-11	PLUG, CONNECTOR 2P	
CN251	* 1-564-507-11	PLUG, CONNECTOR 4P	
CN601	* 1-580-843-11	PIN, CONNECTOR (POWER)	
CN602	* 1-508-786-00	PIN, CONNECTOR (5mm PITCH) 2P	
CN603	* 1-508-786-00	PIN, CONNECTOR (5mm PITCH) 2P	
CN606	1-695-915-11	TAB (CONTACT)	
CN609	* 1-564-506-11	PLUG, CONNECTOR 3P	
CN612	1-695-915-11	TAB (CONTACT)	
CN613	1-695-915-11	TAB (CONTACT)	
CN614	1-695-915-11	TAB (CONTACT)	
CN615	1-695-915-11	TAB (CONTACT)	
CN851	* 1-508-766-00	PIN, CONNECTOR (5mm PITCH) 4P	
<TRIMMER>			
CT45	1-579-690-11	TRAP, CERAMIC (J21MF2J)	
CT55	1-404-801-11	TRAP, CERAMIC	
CT60	1-409-429-11	TRAP, CERAMIC (J21MF2J)	
CT65	1-409-327-00	TRAP, CERAMIC (6.5MHZ) (J21MF2J)	
<DIODE>			
D001	8-719-109-81	DIODE RD4.7ESB2	
D002	8-719-911-19	DIODE 1SS119-25	
D003	8-719-041-97	DIODE MA113-(TX)	
D005	8-719-109-84	DIODE RD5.1ESB1	
D008	8-719-109-89	DIODE RD5.6ESB2	
D103	8-719-914-42	DIODE DA204K	
D201	8-719-041-97	DIODE MA113-(TX)	
D251	8-719-041-97	DIODE MA113-(TX)	
D252	8-719-914-42	DIODE DA204K	
D253	8-719-041-97	DIODE MA113-(TX)	
D300	8-719-041-97	DIODE MA113-(TX)	
D301	8-719-041-97	DIODE MA113-(TX)	
D305	8-719-041-97	DIODE MA113-(TX)	
D306	8-719-911-19	DIODE 1SS119-25	
D307	8-719-911-19	DIODE 1SS119-25	
D308	8-719-109-54	DIODE RD2.2ESB2	
D310	8-719-041-97	DIODE MA113-(TX)	
D311	8-719-109-54	DIODE RD2.2ESB2	
D312	8-719-110-08	DIODE RD8.2ESB2	
D315	8-719-121-24	DIODE RD9.1ESL	
D351	8-719-908-03	DIODE GP08D	
D399	8-719-977-22	DIODE DTZ9.1	
D401	8-719-421-40	DIODE MA77 (J21MF2J)	
D402	8-719-911-19	DIODE 1SS119-25 (J21MF2J)	
D403	8-719-911-19	DIODE 1SS119-25	
D513	8-719-109-84	DIODE RD5.1ESB1	
D551	8-719-908-03	DIODE GP08D	
D561	8-719-911-19	DIODE 1SS119-25	
D591	8-719-911-19	DIODE 1SS119-25	
D601	8-719-510-53	DIODE D4SB60L	
D604	8-719-312-10	DIODE RU4AM-T3	
D605	8-719-067-18	DIODE RN4Z	
D606	8-719-067-18	DIODE RN4Z	
D607	8-719-510-26	DIODE D1NL20-TA2	
D609	8-719-510-26	DIODE D1NL20-TA2	
D610	8-719-510-26	DIODE D1NL20-TA2	
D611	8-719-510-26	DIODE D1NL20-TA2	
D801	8-719-945-80	DIODE ERC06-15S	
D802	8-719-900-26	DIODE ERD29-08J	

The components identified by shading and mark Δ are critical for safety.
Replace only with part number specified.

A

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
D851	8-719-302-43	DIODE EL1Z		JR113	1-216-295-91	SHORT 0	
D852	8-719-028-72	DIODE RGP02-17EL-6433		JR115	1-216-295-91	SHORT 0	
D853	8-719-302-43	DIODE EL1Z		JR116	1-216-295-91	SHORT 0 (J21MF2J)	
D855	8-719-302-43	DIODE EL1Z		JR117	1-216-295-91	SHORT 0	
D857	8-719-908-03	DIODE GP08D		JR118	1-216-295-91	SHORT 0	
D858	8-719-908-03	DIODE GP08D		JR125	1-216-295-91	SHORT 0	
D860	8-719-911-19	DIODE 1SS119-25		JR126	1-216-295-91	SHORT 0	
D901	1-810-039-11	LED UNIT		JR179	1-216-295-91	SHORT 0	
D1201	8-719-121-24	DIODE RD9.1ESL		JR203	1-216-295-91	SHORT 0 (2199M5J)	
D1202	8-719-121-24	DIODE RD9.1ESL		JR204	1-216-295-91	SHORT 0	
D1203	8-719-121-24	DIODE RD9.1ESL (J21MF2J)					
D1207	8-719-121-24	DIODE RD9.1ESL				<COIL>	
D1208	8-719-110-14	DIODE RD9.1ESB3		L001	1-408-397-00	INDUCTOR 1UH	
D1209	8-719-121-24	DIODE RD9.1ESL (J21MF2J)		L002	1-410-509-11	INDUCTOR 10UH	
D1504	8-719-911-19	DIODE 1SS119-25		L003	1-408-605-31	INDUCTOR 15UH	
D1505	8-719-109-81	DIODE RD4.7ESB2		L101	1-410-470-11	INDUCTOR 10UH	
				L301	1-408-408-00	INDUCTOR 8.2UH	
		<FUSE>		L401	1-410-498-11	INDUCTOR 1.2UH	
F601	Δ 1-532-237-00	FUSE, TIME-LAG (BET) 3.15A/250V		L402	1-410-510-11	INDUCTOR 12UH	
	1-533-223-11	CLIP, FUSE ; F601		L403	1-410-510-11	INDUCTOR 12UH (J21MF2J)	
				L404	1-410-508-11	INDUCTOR 8.2UH (J21MF2J)	
				L405	1-410-508-11	INDUCTOR 8.2UH (J21MF2J)	
		<FERRITE BEAD>		L406	1-410-507-11	INDUCTOR 6.8UH	
FB101	1-410-397-21	INDUCTOR 1.1UH		L407	1-410-511-11	INDUCTOR 15UH (J21MF2J)	
FB102	1-410-397-21	INDUCTOR 1.1UH		L408	1-410-500-11	INDUCTOR 1.8UH (J21MF2J)	
FB103	1-410-397-21	INDUCTOR 1.1UH		L409	1-410-501-11	INDUCTOR 2.2UH (J21MF2J)	
FB251	1-410-397-21	INDUCTOR 1.1UH		L410	1-410-501-11	INDUCTOR 2.2UH	
FB601	1-410-397-21	INDUCTOR 1.1UH		L411	1-410-502-11	INDUCTOR 2.7UH (J21MF2J)	
FB603	1-410-397-21	INDUCTOR 1.1UH		L802	1-412-527-11	INDUCTOR 15UH	
FB610	Δ 1-410-396-41	INDUCTOR 0.45UH		L804	1-459-075-11	COIL,DYNAMIC CONVERSION CHOKE	
FB612	1-410-397-21	INDUCTOR 1.1UH		L805	Δ 1-459-769-13	COIL, HORIZONTAL LINEARITY	
FB801	1-410-397-21	INDUCTOR 1.1UH		L807	1-459-390-00	COIL (WITH CORE)	
				L808	1-412-552-11	INDUCTOR 2.2mH	
		<IC>		L821	1-459-111-00	COIL, DRAM CORE (CDI)	
IC001	8-752-891-61	IC CXP85220A-060S		L850	1-408-947-00	INDUCTOR 2.2mH	
IC002	8-759-805-37	IC L78LR05D-MA				<TRANSISTOR>	
IC003	8-759-370-33	IC ST24C04FB6		Q030	8-729-422-27	TRANSISTOR 2SD601A-Q	
IC004	8-742-041-12	HYB IC SBX1981-11		Q108	8-729-422-27	TRANSISTOR 2SD601A-Q	
IC100	8-759-157-40	IC uPC574J		Q109	8-729-422-27	TRANSISTOR 2SD601A-Q	
IC201	8-759-476-86	IC TDA7438D		Q110	8-729-422-27	TRANSISTOR 2SD601A-Q	
IC203	8-759-339-60	IC TA8248K		Q202	8-729-216-22	TRANSISTOR 2SA1162-G	
IC300	8-759-365-26	IC TDA8375A		Q207	8-729-216-22	TRANSISTOR 2SA1162-G	
IC351	8-759-288-85	IC TDA4665T-T		Q208	8-729-421-19	TRANSISTOR UN2213	
IC354	8-759-251-56	IC TDA8395T		Q209	8-729-424-67	TRANSISTOR UN2216	
IC401	8-759-800-65	IC LA7910 (J21MF2J)		Q210	8-729-424-67	TRANSISTOR UN2216	
IC521	8-759-054-12	IC PQ09RA1		Q301	8-729-421-22	TRANSISTOR UN2211	
IC551	8-759-801-98	IC LA7830		Q302	8-729-422-27	TRANSISTOR 2SD601A-Q	
IC601	8-749-014-00	IC STR-S6707N		Q303	8-729-422-27	TRANSISTOR 2SD601A-Q	
IC602	8-749-921-89	IC SE115N		Q402	8-729-922-66	TRANSISTOR 2SC2410SN	
IC603	Δ 8-749-010-64	PHOTO COUPLER PC123F2		Q403	8-729-424-67	TRANSISTOR UN2216 (J21MF2J)	
IC801	8-759-100-96	IC uPC4558G2		Q404	8-729-424-67	TRANSISTOR UN2216 (J21MF2J)	
IC1210	8-759-100-96	IC uPC4558G2		Q405	8-729-216-22	TRANSISTOR 2SA1162-G (J21MF2J)	
				Q406	8-729-216-22	TRANSISTOR 2SA1162-G	
		<JACK>		Q407	8-729-216-22	TRANSISTOR 2SA1162-G (J21MF2J)	
J251	1-770-786-11	JACK		Q408	8-729-422-27	TRANSISTOR 2SD601A-Q	
J1201	1-770-660-11	JACK BLOCK, PIN 4P (2199M5J)		Q409	8-729-216-22	TRANSISTOR 2SA1162-G	
J1201	1-779-850-11	JACK BLOCK, PIN 6P (J21MF2J)		Q410	8-729-216-22	TRANSISTOR 2SA1162-G (J21MF2J)	
J1202	1-770-329-11	JACK, PIN 3P (J21MF2J)		Q411	8-729-422-27	TRANSISTOR 2SD601A-Q (J21MF2J)	
J1202	1-779-205-11	JACK, PIN 2P (2199M5J)		Q412	8-729-422-27	TRANSISTOR 2SD601A-Q (J21MF2J)	
				Q413	8-729-424-67	TRANSISTOR UN2216 (J21MF2J)	
		<CHIP CONDUCTOR>		Q414	8-729-422-27	TRANSISTOR 2SD601A-Q	
JR050	1-216-295-91	SHORT 0		Q415	8-729-424-67	TRANSISTOR UN2216 (J21MF2J)	
JR052	1-216-295-91	SHORT 0		Q416	8-729-422-27	TRANSISTOR 2SD601A-Q (J21MF2J)	
JR101	1-216-295-91	SHORT 0		Q417	8-729-424-67	TRANSISTOR UN2216 (J21MF2J)	
JR107	1-216-295-91	SHORT 0 (2199M5J)		Q418	8-729-424-67	TRANSISTOR UN2216 (J21MF2J)	
JR112	8-719-041-97	DIODE MA113-(TX)		Q561	8-729-200-17	TRANSISTOR 2SA1091-O	




REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
Q801	8-729-140-50	TRANSISTOR 2SC3209LK		R114	1-216-041-00	RES, CHIP 470	
Q802	8-729-821-87	TRANSISTOR 2SD1878-CA		R115	1-216-081-00	RES, CHIP 22K	
Q821	8-729-209-15	TRANSISTOR 2SD2012		R116	1-216-081-00	RES, CHIP 22K	
Q902	8-729-421-19	TRANSISTOR UN2213		R117	1-216-081-00	RES, CHIP 22K	
Q903	8-729-421-19	TRANSISTOR UN2213		R118	1-216-081-00	RES, CHIP 22K	
Q1201	8-729-422-27	TRANSISTOR 2SD601A-Q		R119	1-216-055-00	RES, CHIP 1.8K	
Q1202	8-729-422-27	TRANSISTOR 2SD601A-Q		R120	1-216-109-00	RES, CHIP 330K	
Q1203	8-729-422-27	TRANSISTOR 2SD601A-Q		R131	1-216-464-11	METAL OXIDE 18K	5% 2W F
Q1204	8-729-216-22	TRANSISTOR 2SA1162-G		R180	1-216-033-00	RES, CHIP 220	
Q1205	8-729-216-22	TRANSISTOR 2SA1162-G (J21MF2J)		R181	1-216-033-00	RES, CHIP 220	
Q1207	8-729-422-27	TRANSISTOR 2SD601A-Q		R182	1-216-033-00	RES, CHIP 220	
Q1208	8-729-422-27	TRANSISTOR 2SD601A-Q		R203	1-216-033-00	RES, CHIP 220	
Q1209	8-729-422-27	TRANSISTOR 2SD601A-Q		R204	1-216-033-00	RES, CHIP 220	
Q1264	8-729-424-67	TRANSISTOR UN2216 (J21MF2J)		R210	1-216-061-00	RES, CHIP 3.3K	
Q1265	8-729-424-67	TRANSISTOR UN2216		R211	1-216-061-00	RES, CHIP 3.3K	
Q1513	8-729-422-27	TRANSISTOR 2SD601A-Q		R212	1-216-059-00	RES, CHIP 2.7K	
		<RESISTOR>		R213	1-216-059-00	RES, CHIP 2.7K	
R001	1-216-065-00	RES, CHIP 4.7K		R240	1-216-035-00	RES, CHIP 270	
R002	1-216-065-00	RES, CHIP 4.7K		R242	1-216-035-00	RES, CHIP 270	
R003	1-216-065-00	RES, CHIP 4.7K		R243	1-216-073-00	RES, CHIP 10K	
R004	1-216-065-00	RES, CHIP 4.7K		R244	1-216-073-00	RES, CHIP 10K	
R007	1-216-073-00	RES, CHIP 10K		R245	1-216-067-00	RES, CHIP 5.6K	
R008	1-216-057-00	RES, CHIP 2.2K		R246	1-216-067-00	RES, CHIP 5.6K	
R009	1-216-049-91	RES, CHIP 1.0K (J21MF2J)		R247	1-216-049-91	RES, CHIP 1.0K (J21MF2J)	
R010	1-216-049-91	RES, CHIP 1.0K		R247	1-216-073-00	RES, CHIP 10K (2199M5J)	
R012	1-216-017-91	RES, CHIP 47		R248	1-216-049-91	RES, CHIP 1.0K (J21MF2J)	
R013	1-216-049-91	RES, CHIP 1.0K		R248	1-216-073-00	RES, CHIP 10K (2199M5J)	
R014	1-216-049-91	RES, CHIP 1.0K (J21MF2J)		R249	1-216-049-91	RES, CHIP 1.0K (J21MF2J)	
R015	1-216-043-91	RES, CHIP 560		R249	1-216-077-00	RES, CHIP 15K (2199M5J)	
R016	1-216-049-91	RES, CHIP 1.0K		R250	1-216-049-91	RES, CHIP 1.0K (J21MF2J)	
R017	1-216-057-00	RES, CHIP 2.2K		R250	1-216-077-00	RES, CHIP 15K (2199M5J)	
R018	1-216-033-00	RES, CHIP 220		R251	1-216-295-91	SHORT 0	
R019	1-216-101-00	RES, CHIP 150K		R252	1-249-411-11	CARBON 330	5% 1/4W
R021	1-216-065-00	RES, CHIP 4.7K		R253	1-216-073-00	RES, CHIP 10K	
R025	1-216-057-00	RES, CHIP 2.2K		R254	1-249-389-11	CARBON 4.7	5% 1/4W
R026	1-216-057-00	RES, CHIP 2.2K		R255	1-249-389-11	CARBON 4.7	5% 1/4W
R028	1-216-025-91	RES, CHIP 100		R256	1-249-411-11	CARBON 330	5% 1/4W
R029	1-216-065-00	RES, CHIP 4.7K		R257	8-719-041-97	DIODE MA113-(TX)	
R031	1-216-049-91	RES, CHIP 1.0K		R264	1-216-061-00	RES, CHIP 3.3K (J21MF2J)	
R033	1-216-049-91	RES, CHIP 1.0K		R264	1-216-065-00	RES, CHIP 4.7K (2199M5J)	
R035	1-216-049-91	RES, CHIP 1.0K		R265	1-216-061-00	RES, CHIP 3.3K (J21MF2J)	
R036	1-216-049-91	RES, CHIP 1.0K		R265	1-216-065-00	RES, CHIP 4.7K (2199M5J)	
R037	1-216-049-91	RES, CHIP 1.0K		R266	1-216-073-00	RES, CHIP 10K	
R038	1-216-033-00	RES, CHIP 220		R301	1-216-073-00	RES, CHIP 10K	
R040	1-216-033-00	RES, CHIP 220		R302	1-216-063-91	RES, CHIP 3.9K	
R041	1-216-025-91	RES, CHIP 100		R303	1-216-025-91	RES, CHIP 100	
R042	1-216-039-00	RES, CHIP 390		R304	1-216-025-91	RES, CHIP 100	
R045	1-216-057-00	RES, CHIP 2.2K		R305	1-216-025-91	RES, CHIP 100	
R047	1-216-025-91	RES, CHIP 100		R306	1-216-025-91	RES, CHIP 100	
R048	1-216-025-91	RES, CHIP 100		R307	1-216-025-91	RES, CHIP 100	
R053	1-216-057-00	RES, CHIP 2.2K		R308	1-216-033-00	RES, CHIP 220	
R054	1-216-073-00	RES, CHIP 10K		R309	1-216-033-00	RES, CHIP 220	
R057	1-216-049-91	RES, CHIP 1.0K		R310	1-216-097-91	RES, CHIP 100K	
R058	1-216-065-00	RES, CHIP 4.7K (J21MF2J)		R311	1-216-075-00	RES, CHIP 12K	
R060	1-216-037-00	RES, CHIP 330		R312	1-216-025-91	RES, CHIP 100	
R061	1-216-049-91	RES, CHIP 1.0K		R313	1-216-061-00	RES, CHIP 3.3K	
R062	1-216-057-00	RES, CHIP 2.2K		R314	1-216-025-91	RES, CHIP 100	
R063	1-216-057-00	RES, CHIP 2.2K		R315	1-216-295-91	SHORT 0	
R068	1-216-025-91	RES, CHIP 100		R316	1-216-065-00	RES, CHIP 4.7K	
R071	1-216-037-00	RES, CHIP 330		R317	1-216-049-91	RES, CHIP 1.0K	
R072	1-216-061-00	RES, CHIP 3.3K		R318	1-216-099-00	RES, CHIP 120K	
R076	1-216-025-91	RES, CHIP 100		R319	1-216-123-11	RES, CHIP 1.2M	
R077	1-216-025-91	RES, CHIP 100		R320	1-216-083-00	RES, CHIP 27K	
R090	1-216-073-00	RES, CHIP 10K		R321	1-216-689-11	METAL CHIP 39K	0.50% 1/10W
R101	1-216-065-00	RES, CHIP 4.7K		R322	1-216-083-00	RES, CHIP 27K	
R102	1-216-049-91	RES, CHIP 1.0K		R325	1-216-295-91	SHORT 0	
R113	1-216-081-00	RES, CHIP 22K		R326	1-216-063-91	RES, CHIP 3.9K	
				R327	1-216-295-91	SHORT 0	
				R328	1-216-295-91	SHORT 0	







The components identified by shading and mark Δ are critical for safety.
Replace only with part number specified.



REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
R329	1-216-295-91	SHORT	0	R602	1-202-968-11	CEMENTED	1.2 5% 10W
R330	1-216-043-91	RES, CHIP 560		R606	1-215-915-11	METAL OXIDE	470 5% 3W F
R331	1-216-117-00	RES, CHIP 680K		R610	1-215-924-00	METAL OXIDE	15K 5% 3W F
R332	1-216-033-00	RES, CHIP 220		R611	Δ 1-202-933-61	FUSIBLE	0.1 10% 1/2W F
R334	1-216-041-00	RES, CHIP 470		R612	1-249-377-11	CARBON	0.47 5% 1/4W F
R335	1-216-073-00	RES, CHIP 10K		R613	1-249-377-11	CARBON	0.47 5% 1/4W F
R336	1-216-057-00	RES, CHIP 2.2K		R614	1-215-877-11	METAL OXIDE	22K 5% 1W F
R338	1-216-295-91	SHORT	0	R615	1-249-389-11	CARBON	4.7 5% 1/4W
R339	1-216-036-00	RES, CHIP 300		R616	Δ 1-218-265-91	METAL	8.2M 5% 1W
R340	1-216-035-00	RES, CHIP 270		R617	1-215-924-00	METAL OXIDE	15K 5% 3W F
R341	1-216-049-91	RES, CHIP 1.0K		R618	1-249-377-11	CARBON	0.47 5% 1/4W F
R351	1-216-001-00	RES, CHIP 10		R619	1-249-377-11	CARBON	0.47 5% 1/4W F
R355	1-216-001-00	RES, CHIP 10		R622	1-217-192-21	WIREWOUND	0.22 10% 2W F
R356	1-216-049-91	RES, CHIP 1.0K		R623	1-247-807-31	CARBON	100 5% 1/4W
R360	1-208-291-11	RES, CHIP 4.7M		R624	1-216-446-00	METAL OXIDE	18 5% 2W F
R403	1-216-021-00	RES, CHIP 68		R625	1-249-424-11	CARBON	3.9K 5% 1/4W
R406	1-216-065-00	RES, CHIP 4.7K		R626	1-249-420-11	CARBON	1.8K 5% 1/4W
R407	1-216-063-91	RES, CHIP 3.9K		R627	1-249-417-11	CARBON	1K 5% 1/4W
R408	1-216-055-00	RES, CHIP 1.8K		R628	1-249-417-11	CARBON	1K 5% 1/4W
R409	1-216-025-91	RES, CHIP 100		R629	1-249-399-11	CARBON	33 5% 1/4W
R410	1-216-073-00	RES, CHIP 10K (J21MF2J)		R632	1-249-381-11	CARBON	1 5% 1/4W
R411	1-216-057-00	RES, CHIP 2.2K (J21MF2J)		R636	1-215-924-00	METAL OXIDE	15K 5% 3W F
R412	1-216-069-00	RES, CHIP 6.8K (J21MF2J)		R801	1-215-920-11	METAL OXIDE	3.3K 5% 3W F
R413	1-216-057-00	RES, CHIP 2.2K (J21MF2J)		R802	1-249-385-11	CARBON	2.2 5% 1/4W F
R414	1-216-041-00	RES, CHIP 470		R803	1-216-057-00	RES, CHIP 2.2K	
R415	1-216-033-00	RES, CHIP 220 (J21MF2J)		R804	1-216-049-91	RES, CHIP 1.0K	
R416	1-216-033-00	RES, CHIP 220		R805	1-216-081-00	RES, CHIP 22K	
R417	1-216-033-00	RES, CHIP 220 (J21MF2J)		R809	1-247-756-11	CARBON	2.2K 5% 1/2W F
R418	1-216-045-00	RES, CHIP 680 (J21MF2J)		R811	1-216-343-00	METAL OXIDE	0.33 5% 1W F
R419	1-216-049-91	RES, CHIP 1.0K		R812	1-216-075-00	RES, CHIP 12K	
R420	1-216-039-00	RES, CHIP 390		R816	1-249-435-11	CARBON	33K 5% 1/4W
R421	1-216-033-00	RES, CHIP 220		R820	1-216-655-11	METAL CHIP	1.5K 0.50% 1/10W
R422	1-216-027-00	RES, CHIP 120 (J21MF2J)		R821	1-215-911-11	METAL OXIDE	100 5% 3W F
R423	1-216-029-00	RES, CHIP 150 (J21MF2J)		R822	1-216-429-00	METAL OXIDE	270 5% 1W F
R424	1-216-057-00	RES, CHIP 2.2K		R823	1-249-931-11	CARBON	2.2K 5% 1/4W F
R425	1-216-039-00	RES, CHIP 390		R825	1-249-392-11	CARBON	8.2 5% 1/4W F
R426	1-216-029-00	RES, CHIP 150		R826	1-216-059-00	RES, CHIP 2.7K	
R427	1-216-037-00	RES, CHIP 330 (J21MF2J)		R827	1-216-095-00	RES, CHIP 82K	
R428	1-216-081-00	RES, CHIP 22K (J21MF2J)		R828	1-216-063-91	RES, CHIP 3.9K	
R429	1-216-031-00	RES, CHIP 180 (J21MF2J)		R829	1-216-053-00	RES, CHIP 1.5K	
R429	1-216-039-00	RES, CHIP 390 (2199M5J)		R831	1-215-886-11	METAL OXIDE	100 5% 2W F
R430	1-216-041-00	RES, CHIP 470 (J21MF2J)		R832	1-216-057-00	RES, CHIP 2.2K	
R431	1-216-081-00	RES, CHIP 22K (J21MF2J)		R834	1-216-073-00	RES, CHIP 10K	
R432	1-216-041-00	RES, CHIP 470 (J21MF2J)		R851	1-249-382-11	CARBON	1.2 5% 1/4W F
R433	1-216-081-00	RES, CHIP 22K		R852	1-249-417-11	CARBON	1K 5% 1/4W F
R434	1-216-041-00	RES, CHIP 470		R853	1-249-377-11	CARBON	0.47 5% 1/4W F
R435	1-216-041-00	RES, CHIP 470 (J21MF2J)		R854	1-249-377-11	CARBON	0.47 5% 1/4W F
R436	1-216-081-00	RES, CHIP 22K (J21MF2J)		R855	1-202-818-00	SOLID	1K 20% 1/2W
R437	1-216-081-00	RES, CHIP 22K (J21MF2J)		R856	1-249-429-11	CARBON	10K 5% 1/4W
R440	1-216-029-00	RES, CHIP 150		R857	1-249-438-11	CARBON	56K 5% 1/4W
R521	1-216-049-91	RES, CHIP 1.0K		R858	1-216-370-11	METAL OXIDE	1.2 5% 2W F
R552	1-216-101-00	RES, CHIP 150K		R860	1-247-887-00	CARBON	220K 5% 1/4W
R553	1-216-081-00	RES, CHIP 22K		R881	1-216-043-91	RES, CHIP 560	
R554	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	R882	1-216-059-00	RES, CHIP 2.7K	
R555	1-249-429-11	CARBON 10K	5% 1/4W	R883	1-216-121-91	RES, CHIP 1.0M	
R556	1-216-049-91	RES, CHIP 1.0K		R895	1-216-349-00	METAL OXIDE	1 5% 1W F
R557	1-216-055-00	RES, CHIP 1.8K		R898	1-249-421-11	CARBON	2.2K 5% 1/4W
R560	1-216-295-91	SHORT	0	R902	1-216-065-00	RES, CHIP 4.7K	
R561	1-249-421-11	CARBON 2.2K	5% 1/4W	R906	1-216-065-00	RES, CHIP 4.7K	
R562	1-249-419-11	CARBON 1.5K	5% 1/4W	R907	1-216-043-91	RES, CHIP 560	
R563	1-247-885-00	CARBON 180K	5% 1/4W	R908	1-216-059-00	RES, CHIP 2.7K	
R564	1-216-091-00	RES, CHIP 56K		R909	1-216-071-00	RES, CHIP 8.2K	
R565	1-216-091-00	RES, CHIP 56K		R910	1-216-043-91	RES, CHIP 560	
R566	1-216-065-00	RES, CHIP 4.7K		R911	1-216-059-00	RES, CHIP 2.7K	
R569	1-247-883-00	CARBON 150K	5% 1/4W	R912	1-216-071-00	RES, CHIP 8.2K	
R570	1-216-295-91	SHORT	0	R913	1-216-041-00	RES, CHIP 470	
R571	1-216-033-00	RES, CHIP 220		R914	1-216-041-00	RES, CHIP 470	
R601	1-202-968-11	CEMENTED	1.2 5% 10W	R1201	1-216-023-00	RES, CHIP 82	



The components identified by shading and mark  are critical for safety. Replace only with part number specified.

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
R1202	1-216-049-91	RES, CHIP 1.0K		<TRANSFORMER>			
R1203	1-216-089-91	RES, CHIP 47K		T601	 1-429-137-21	TRANSFORMER, CONVERTER (SRT)	
R1204	1-216-089-91	RES, CHIP 47K (J21MF2J)		T605	 1-424-682-11	TRANSFORMER, LINE FILTER	
R1205	1-216-023-00	RES, CHIP 82		T801	1-437-195-11	TRANSFORMER, HORIZONTAL DRIVE	
R1206	1-216-089-91	RES, CHIP 47K		T851	 1-453-250-11	TRANSFORMER ASSY, FLYBACK (NX-1746//M3A)	
R1207	1-216-089-91	RES, CHIP 47K (J21MF2J)		<THERMISTOR>			
R1211	1-216-021-00	RES, CHIP 68		THP601	 1-808-059-32	THERMISTOR, POSITIVE	
R1212	1-216-049-91	RES, CHIP 1.0K		<TUNER>			
R1213	1-216-049-91	RES, CHIP 1.0K (J21MF2J)		TU101	 8-598-323-00	TUNER BT-AG401	
R1214	1-216-113-00	RES, CHIP 470K (J21MF2J)		<CRYSTAL>			
R1215	1-216-113-00	RES, CHIP 470K		X101	1-577-358-21	VIBRATOR, CERAMIC	
R1216	1-216-113-00	RES, CHIP 470K		X300	1-411-752-11	COIL	
R1218	1-216-041-00	RES, CHIP 470		X358	1-567-505-11	OSCILLATOR, CRYSTAL	
R1219	1-216-073-00	RES, CHIP 10K		X443	1-567-504-11	OSCILLATOR, CRYSTAL	
R1220	1-216-049-91	RES, CHIP 1.0K		*****			
R1221	1-216-073-00	RES, CHIP 10K		* A-1331-748-A C BOARD, COMPLETE			
R1222	1-216-049-91	RES, CHIP 1.0K (J21MF2J)		*****			
R1223	1-216-073-00	RES, CHIP 10K (J21MF2J)		4-382-854-11 SCREW (M3X10), P, SW (+)			
R1224	1-216-073-00	RES, CHIP 10K (J21MF2J)		<CAPACITOR>			
R1226	1-216-689-11	RES, CHIP 39K (J21MF2J)		C701	1-162-114-00	CERAMIC	0.0047MF 2KV
R1227	1-216-689-11	RES, CHIP 39K		C702	1-102-074-00	CERAMIC	0.001MF 10% 50V
R1228	1-216-049-91	RES, CHIP 1.0K		C703	1-107-651-11	ELECT	4.7MF 20% 250V
R1229	1-216-041-00	RES, CHIP 470		C704	1-130-202-00	FILM	0.022MF 5% 400V
R1230	1-216-073-00	RES, CHIP 10K		C708	1-102-114-00	CERAMIC	470PF 10% 50V
R1231	1-216-049-91	RES, CHIP 1.0K		C709	1-102-114-00	CERAMIC	470PF 10% 50V
R1232	1-216-063-91	RES, CHIP 3.9K		C710	1-102-114-00	CERAMIC	470PF 10% 50V
R1233	1-216-057-00	RES, CHIP 2.2K		C712	1-102-116-00	CERAMIC	680PF 10% 50V
R1234	1-216-088-00	RES, CHIP 43K (J21MF2J)		C713	1-102-116-00	CERAMIC	680PF 10% 50V
R1235	1-216-088-00	RES, CHIP 43K (J21MF2J)		C714	1-102-116-00	CERAMIC	680PF 10% 50V
R1235	1-216-689-11	RES, CHIP 39K (2199M5J)		C716	1-126-968-11	ELECT	100MF 20% 50V
R1239	1-249-389-11	CARBON 4.7 5% 1/4W F		C717	1-101-880-00	CERAMIC	47PF 5% 50V
R1240	1-216-025-91	RES, CHIP 100		C736	1-102-114-00	CERAMIC	470PF 10% 50V
R1241	1-216-049-91	RES, CHIP 1.0K		C737	1-102-114-00	CERAMIC	470PF 10% 50V
R1242	1-216-049-91	RES, CHIP 1.0K (J21MF2J)		C746	1-102-114-00	CERAMIC	470PF 10% 50V
R1243	1-216-025-91	RES, CHIP 100		<CONNECTOR>			
R1244	1-216-025-91	RES, CHIP 100 (J21MF2J)		CN701	* 1-508-766-00	PIN, CONNECTOR (5mm PITCH) 4P	
R1245	1-216-037-00	RES, CHIP 330		CN703	* 1-564-509-11	PLUG, CONNECTOR 6P	
R1246	1-216-037-00	RES, CHIP 330		CN704	1-695-915-11	TAB (CONTACT)	
R1247	1-216-041-00	RES, CHIP 470		<DIODE>			
R1248	1-216-053-00	RES, CHIP 1.5K		D701	8-719-911-19	DIODE 1SS119-25	
R1249	1-216-044-00	RES, CHIP 620		D702	8-719-911-19	DIODE 1SS119-25	
R1250	1-216-119-00	RES, CHIP 820K		D703	8-719-911-19	DIODE 1SS119-25	
R1251	1-216-119-00	RES, CHIP 820K		D707	8-719-911-19	DIODE 1SS119-25	
R1252	1-216-061-00	RES, CHIP 3.3K		D708	8-719-911-19	DIODE 1SS119-25	
R1253	1-216-053-00	RES, CHIP 1.5K (2199M5J)		D709	8-719-911-19	DIODE 1SS119-25	
R1253	1-216-060-00	RES, CHIP 3.0K (J21MF2J)		D710	8-719-911-19	DIODE 1SS119-25	
R1513	1-216-073-00	RES, CHIP 10K		D711	8-719-911-19	DIODE 1SS119-25	
R1514	1-216-065-00	RES, CHIP 4.7K		D712	8-719-911-19	DIODE 1SS119-25	
R1515	1-216-025-91	RES, CHIP 100		D716	8-719-911-19	DIODE 1SS119-25	
<SWITCH>				D717	8-719-121-24	DIODE RD9.1ESL	
S601	 1-571-433-31	SWITCH, PUSH (AC POWER)		<SPARK GAP>			
S801	1-572-707-11	SWITCH, LEVER		SG801	1-519-422-11	GAP, SPARK	
S901	1-571-532-21	SWITCH, TACTIL		<FILTER>			
S902	1-571-532-21	SWITCH, TACTIL		SWF401	1-767-663-11	SAWF (2199M5J)	
S903	1-571-532-21	SWITCH, TACTIL		SWF401	1-760-771-11	FILTER, SURFACE WAVE (J21MF2J)	
S904	1-571-532-21	SWITCH, TACTIL					
S905	1-571-532-21	SWITCH, TACTIL					
S906	1-571-532-21	SWITCH, TACTIL					

The components identified by shading and mark Δ are critical for safety.
Replace only with part number specified.



REF. NO.	PART NO.	DESCRIPTION	REMARK
<JACK>			
J701	Δ 1-251-239-11	SOCKET, PICTURE TUBE	
<COIL>			
L701	1-410-667-31	INDUCTOR 22UH	
<TRANSISTOR>			
Q704	8-729-326-11	TRANSISTOR 2SC2611	
Q704	8-729-326-11	TRANSISTOR 2SC2611	
Q704	8-729-326-11	TRANSISTOR 2SC2611	
Q705	8-729-326-11	TRANSISTOR 2SC2611	
Q705	8-729-326-11	TRANSISTOR 2SC2611	
Q705	8-729-326-11	TRANSISTOR 2SC2611	
Q706	8-729-326-11	TRANSISTOR 2SC2611	
Q706	8-729-326-11	TRANSISTOR 2SC2611	
Q706	8-729-326-11	TRANSISTOR 2SC2611	
Q707	8-729-200-17	TRANSISTOR 2SA1091-O	
Q708	8-729-200-17	TRANSISTOR 2SA1091-O	
Q709	8-729-200-17	TRANSISTOR 2SA1091-O	
Q710	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q711	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q712	8-729-119-78	TRANSISTOR 2SC2785-HFE	
<RESISTOR>			
R702	1-244-941-00	CARBON 680K	5% 1/2W
R703	1-249-496-11	CARBON 100K	5% 1/2W
R705	1-216-393-00	METAL OXIDE 2.2	5% 3W F
R710	1-215-922-11	METAL OXIDE 6.8K	5% 3W F
R711	1-247-762-11	CARBON 6.8K	5% 1/2W
R712	1-215-922-11	METAL OXIDE 6.8K	5% 3W F
R713	1-247-762-11	CARBON 6.8K	5% 1/2W
R714	1-215-922-11	METAL OXIDE 6.8K	5% 3W F
R715	1-247-762-11	CARBON 6.8K	5% 1/2W
R719	1-215-480-00	METAL 300K	1% 1/4W
R720	1-249-923-11	CARBON 1K	5% 1/4W F
R721	1-215-489-00	METAL 680K	1% 1/4W
R722	1-249-923-11	CARBON 1K	5% 1/4W F
R723	1-215-479-00	METAL 270K	1% 1/4W
R724	1-249-923-11	CARBON 1K	5% 1/4W F
R725	1-249-419-11	CARBON 1.5K	5% 1/4W
R726	1-249-419-11	CARBON 1.5K	5% 1/4W
R727	1-249-419-11	CARBON 1.5K	5% 1/4W
R728	1-249-407-11	CARBON 150	5% 1/4W
R729	1-249-408-11	CARBON 180	5% 1/4W
R730	1-249-408-11	CARBON 180	5% 1/4W
R731	1-249-399-11	CARBON 33	5% 1/4W
R732	1-249-399-11	CARBON 33	5% 1/4W
R733	1-249-399-11	CARBON 33	5% 1/4W
R734	1-247-739-11	CARBON 100	5% 1/2W
R738	1-247-807-31	CARBON 100	5% 1/4W
R739	1-247-807-31	CARBON 100	5% 1/4W
R740	1-247-807-31	CARBON 100	5% 1/4W
R755	1-249-418-11	CARBON 1.2K	5% 1/4W
R756	1-249-418-11	CARBON 1.2K	5% 1/4W
R757	1-249-418-11	CARBON 1.2K	5% 1/4W
<VARIABLE RESISTOR>			
RV701	1-230-641-11	RES, ADJ, METAL GLAZE 2.2M	

REF. NO.	PART NO.	DESCRIPTION	REMARK
* A-1342-405-A VM BOARD, COMPLETE *****			
4-382-854-11		SCREW (M3X10), P, SW (+)	
<CAPACITOR>			
C1722	1-102-115-00	CERAMIC 560PF	10% 50V
C1724	1-102-961-00	CERAMIC 27PF	5% 50V
C1751	1-136-153-00	FILM 0.01MF	5% 50V
C1761	1-161-830-00	CERAMIC 0.0047MF	500V
C1763	1-107-638-11	ELECT 33MF	20% 160V
C1764	1-126-933-11	ELECT 100MF	20% 16V
C1768	1-106-383-00	MYLAR 0.047MF	10% 200V
C1769	1-107-667-11	ELECT 2.2MF	20% 160V
C1770	1-104-999-11	MYLAR 0.1MF	10% 200V
C1771	1-126-964-11	ELECT 10MF	20% 50V
C1772	1-126-933-11	ELECT 100MF	20% 16V
C1773	1-106-383-00	MYLAR 0.047MF	10% 200V
C1775	1-126-933-11	ELECT 100MF	20% 16V
C1776	1-126-964-11	ELECT 10MF	20% 50V
C1778	1-130-471-00	MYLAR 0.001MF	5% 50V
C1779	1-130-471-00	MYLAR 0.001MF	5% 50V
C1780	1-126-964-11	ELECT 10MF	20% 50V
<CONNECTOR>			
CN1701	* 1-564-511-61	PLUG, CONNECTOR 8P	
<DIODE>			
D1761	8-719-911-19	DIODE 1SS119-25	
D1763	8-719-911-19	DIODE 1SS119-25	
D1764	8-719-911-19	DIODE 1SS119-25	
D1767	8-719-982-36	DIODE MTZJ-39B	
D1768	8-719-982-36	DIODE MTZJ-39B	
<COIL>			
L1721	1-414-191-11	INDUCTOR 150UH	
L1722	1-408-621-31	INDUCTOR 330UH	
L1723	1-414-182-11	INDUCTOR 6.8UH	
L1761	1-410-478-11	INDUCTOR 47UH	
L1762	1-408-416-00	INDUCTOR 39UH	
<TRANSISTOR>			
Q1722	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q1723	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q1756	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q1761	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q1762	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q1763	8-729-017-05	TRANSISTOR 2SA1837	
Q1764	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q1765	8-729-017-06	TRANSISTOR 2SC4793	
Q1766	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q1767	8-729-142-86	TRANSISTOR 2SC3733	
Q1777	8-729-326-11	TRANSISTOR 2SC2611	
<RESISTOR>			
R1721	1-249-414-11	CARBON 560	5% 1/4W
R1722	1-249-412-11	CARBON 390	5% 1/4W
R1723	1-249-407-11	CARBON 150	5% 1/4W
R1724	1-249-407-11	CARBON 150	5% 1/4W
R1725	1-249-412-11	CARBON 390	5% 1/4W
R1727	1-247-843-11	CARBON 3.3K	5% 1/4W
R1728	1-249-429-11	CARBON 10K	5% 1/4W
R1732	1-126-964-11	ELECT 10MF	20% 50V



The components identified by shading and mark \triangle are critical for safety.
Replace only with part number specified.

REF. NO.	PART NO.	DESCRIPTION			REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
R1736	1-249-419-11	CARBON	1.5K	5%	1/4W			MISCELLANEOUS	
R1753	1-249-434-11	CARBON	27K	5%	1/4W			*****	
R1762	1-247-815-91	CARBON	220	5%	1/4W				
R1764	1-247-734-11	CARBON	39	5%	1/2W	F	△ 1-409-942-11	COIL, DEMAGNETIZATION	
R1765	1-249-414-11	CARBON	560	5%	1/4W	F	1-452-032-00	MAGNET,DISK ; 10mmø	
R1766	1-249-418-11	CARBON	1.2K	5%	1/4W		1-452-277-00	MAGNET, BMC	
R1768	1-249-421-11	CARBON	2.2K	5%	1/4W		△ 1-452-509-51	NECK ASSY, PICTURE TUBE (NA308)	
							1-503-902-11	SPEAKER (15X6.5 CM)	
R1769	1-249-384-11	CARBON	1.8	5%	1/4W	F	1-569-008-11	ADAPTOR, CONVERSION 2P	
R1770	1-249-435-11	CARBON	33K	5%	1/4W		△ 1-574-062-11	CORD, POWER (WITH CONNECTOR)	
R1772	1-249-432-11	CARBON	18K	5%	1/4W				2.5A/250V
R1774	1-215-912-11	METAL OXIDE	150	5%	3W	F	△ 8-451-280-33	DEFLECTION YOKE (Y21PXA2)	
R1775	1-249-417-11	CARBON	1K	5%	1/4W	F	△ 8-738-774-05	PICTURE TUBE 21PXD(SDS) (A51JUH71X)	
R1776	1-249-432-11	CARBON	18K	5%	1/4W				
R1777	1-249-438-11	CARBON	56K	5%	1/4W				
R1778	1-249-430-11	CARBON	12K	5%	1/4W		*****		
R1779	1-249-414-11	CARBON	560	5%	1/4W				
R1780	1-249-418-11	CARBON	1.2K	5%	1/4W			ACCESSORIES AND PACKING MATERIALS	

R1781	1-249-410-11	CARBON	270	5%	1/4W				
R1782	1-249-384-11	CARBON	1.8	5%	1/4W	F	1-417-151-21	MATCHING TRANSFORMER, ANTENNA	
R1784	1-247-807-31	CARBON	100	5%	1/4W		1-417-154-11	MATCHING TRANSFORMER, ANTENNA	
R1785	1-249-400-11	CARBON	39	5%	1/4W	F	1-501-372-81	ANTENNA, TELESCOPIC	
R1786	1-249-435-11	CARBON	33K	5%	1/4W		1-501-730-11	ANTENNA, TELESCOPIC	
							1-501-730-41	ANTENNA, TELESCOPIC	
R1787	1-249-428-11	CARBON	8.2K	5%	1/4W		1-569-008-11	ADAPTOR, CONVERSION 2P	
R1788	1-249-419-11	CARBON	1.5K	5%	1/4W		3-701-910-00	SCREW, SPECIAL (DIA. 3.8X20)	
R1789	1-249-413-11	CARBON	470	5%	1/4W		3-862-260-11	MANUAL, INSTRUCTION	
R1790	1-216-451-11	METAL OXIDE	120	5%	2W	F	* 4-061-177-01	CUSHION (UPPER) (ASSY)	
R1791	1-249-411-11	CARBON	330	5%	1/4W		* 4-061-178-01	CUSHION (LOWER) (ASSY)	
R1812	1-249-425-11	CARBON	4.7K	5%	1/4W				
R1851	1-249-393-11	CARBON	10	5%	1/4W		* 4-380-432-21	BAG, PROTECTION	
							4-392-003-01	BAND, HOLD	
							4-392-004-01	CLIP	
*****								REMOTE COMMANDER	

							1-475-358-12	REMOTE COMMANDER (RM-869)	
							9-939-697-01	POCKET, COVER (FOR RM-869)	